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MORAL REFLECTIONS

ON THE

WORKS

OF THE

Philanthropus

CREATION.

By Thomas Morris, Barton on Humber

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MORAL REFLECTIONS

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THE

T H E

P R E F A C E.

AS man has an immortal soul, it will behove him to be very serious about eternal consequences; and this great fundamental truth, unestablished and unawakened in the minds of men, it is to be feared, is the real source and support of all our modern irreligion and infidelity.

The design of the following Treatise is to endeavour to remove the prejudices which too many have very inconsiderately imbibed against religion, and the public worship of Almighty God, by displaying the wonderful works of the Almighty in the Creation, and thereby making it appear how reasonable it is that the Author and Contriver of such grand and surprising works should be praised, worshipped, and adored by his rational creatures. The reader, by perusing the following Treatise, will meet with such manifold instances of the Almighty Creator's Omnipotence, Wisdom, and Goodness, as will furnish his mind with a variety of useful and entertaining knowledge. The Great God hath so formed our minds, and imparted to them such high and noble faculties, that we might worship him here, and for ever enjoy him hereafter; and
hath

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vi P R E F A C E.

hath made this numberless variety of creatures, which compose the beautiful fabrick of the universe, to lead us gradually as it were up to himself; and as all these creatures serve and minister to man alone, so ought all the powers of our souls and bodies be employed principally in serving and praising the God of our salvation.

The Compiler is sensible that there are already extant many excellent Discourses on the works of Creation; yet, when he considers how much good has been done by these small moral tracts, which of late years have been printed and dispersed at so easy an expence, he is encouraged to hope this Treatise may be of some service to the reflective reader, who will naturally be struck with admiration and astonishment at the wonderful works of God displayed in the creation, which, though common, were rarely before observed or noticed by him.

This performance is principally selected from approved moral writers, historians, and others, antient and modern; the compiling whereof hath most agreeably amused the author in his leisure hours, and he will think himself sufficiently recompensed for the time it has taken, if it should be of the least service to any one. God provides for infidels who do not acknowledge him, and is good to the wicked who blaspheme his name; what will he then do for Christians who honour and obey him, and whose greatest delight is to search and pry into the amazing works of his creation?

ation? If we serve and obey him, he has promised us his protection, and will never fail of his word; heaven and earth will sooner perish, than the man who puts his confidence in God. Oh! may every one of us seriously consider, before it is too late, how prudent it is, in a matter of such importance, upon which our everlasting welfare or misery depends, to be well advised, so to live as may afford reflections that will soften the agony of the last moments, and let in upon the departing soul a ray of divine mercy to illuminate its passage into an awful eternity. To reflect how quick the advances of time are! the day is gone almost as soon as dawned! the silent moments slip away insensibly! wherever we are, however employed, time pursues his incessant course with unremitted speed, and when it is gone how short it appears! when we behold it in perspective, it seems an extensive plan; but on a retrospective view, how wonderfully is the scene altered! it shrinks into a span. And will an affair of such unspeakable importance admit of a moment's delay, or consist with the least remissness, especially since much of our appointed time is already elapsed, and the remainder is all uncertainty? What a dream is mortal life! what shadows are the objects of sense! all the glories of mortality will be nothing in our view at the awful hour of death, when we must be separated from the whole creation, and enter the borders of the immaterial world. The approaches of death set the world in a true light; its brightest advantages appear no more than a dream:

dream : In that solemn period, when the powers of nature are drooping, and the vital spark grows languid and faint, nature cannot but shiver on the fatal brinks, unwilling to try the grand experiment, whilst the hopes of Christianity alone can support the soul in this solemn crisis.

And now, Lorenzo, dost thou wrap thy soul
In soft security, because unknown
Which moment is commission'd to destroy?
In death's uncertainty thy danger lies :
Is death uncertain? therefore thou be fixt,
Fixt as a centinel, all eye, all ear,
All expectation of the coming foe :
Rouse, stand in arms, nor lean against thy spear,
Lest slumber steal one moment o'er thy soul,
And fate surprise thee. —————

But it is time to finish this digression, and to leave the reader to the perusal of the following work, which, with how little art soever it may be executed, will yet, from the importance of the subject, merit some attention.

M O R A L

MORAL REFLECTIONS

ON THE

WORKS of the CREATION.

THE erect posture in which man is created, loudly calls upon him for the contemplation of the variety of wonders with which the Heavens are profusely adorned: The earth indeed, and the variety of treasures with which it is stored by the hands of Omnipotence, may raise in us exalted ideas of his bounty and munificence; but the Heavens, with their radiant globes, are the only volume which can excite in us a proper, an exalted, and grateful idea of the divine magnificence and immensity. While we confine our observations to the globe we inhabit, we in a manner set limits to the divine munificence; but when we lift up our eyes, and see the other planets which compose this system; or if we, by the assistance of glasses, discern the stupendous number of the fixed stars, which stud and irradiate the milky way, and are so many other suns, each of which has its separate system, how enlarged an idea must we have of the Deity, who has given us such a glorious view of his

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creating

creating power ? Besides their wonderful splendor, the particular influences which the sun and moon, among others, have upon our globe ; their immense magnitudes ; their unspeakable swift motions, hardly to be comprehended by human imagination, and, in the whole, the just and exact observation of so many laws and ways, to which such a number of bodies have been subject for so many ages, through such vast and unknown spaces ; and as this profusion of splendor so strongly indicates the hand which has poured it out upon the concave arch over our heads, what an exalted idea must we have of the Dignity and Omnipotence of our Heavenly Father ? Let us therefore with gratitude bless that hand, who even in the night opens to us the book of nature, and, when the sun is hidden from our eyes, has spread the Heavens with numberless suns to cheer us amidst the glooms of night, and draw our grateful eyes towards that exalted sphere, where the Father of infinite worlds sits enthroned in splendor inaccessible.

The science which informs us of the order, the course, and dimensions of the heavenly luminous bodies, and the various relations in which they stand to the earth, must elevate our minds by the grandeur of the objects which it proposes to our examination.

If we believe the antients, on a subject in which they could not be mistaken, we shall find that the Heavens were that volume, in the
perusal

perusal of which mankind had the strongest proofs of the existence of a God. Men, says the Grecian sage, first began to worship a Deity when they observed that the stars continued so great a harmony, and the days and nights their periodical risings and settings, throughout the year.—The Roman orator, Cicero, sets this truth in a still stronger light, with his usual elegance, “What can be so evident, asks he, what can be so manifest, as when we contemplate the heavens, and view the heavenly bodies, but we must infer, that there is some Deity, of inconceivable excellence, who governs and regulates them?”—In other words, A present, an Almighty God. He that doubts of this may, with the very same reason, doubt the existence of the sun, though he beholds the lustre of its rays; but indeed a greater than the Roman orator teaches us the same doctrine, “The heavens declare the Glory of God, and the firmament sheweth his Handy-work, &c.” He that confines his researches only to this globe, and its furniture, wants no proof of the existence, the wisdom, power, and goodness of the Deity, but yet at the same time cramps his faculties. The book of nature consists of two volumes, and he that would acquire the most perfect idea of the God of nature, must peruse both; the heavens and the stars, the day and night, have a language. “There is no speech, or language, where theirs is not heard, and their words are gone to the ends of the world:” But notwithstanding this, unless their language be-

come the object of our meditation, they will speak in vain to our eyes; and though we are charmed with their radiance, we shall be blind to their lessons.—The invisible things of God, said an inspired writer, even his Power and Godhead, are known from the things that are made; their number demonstrates his Power, their proportions and harmony illustrates and enforces the idea we have of his wisdom.—If the antients were so strongly convinced of this grand truth, from an inspection of the volume of creation, notwithstanding the difficulties they laboured under, and their defects in natural history, how much should our reverence and devotion rise above theirs, when, by glasses, we can contemplate a thousand objects they could not discover; and, by the improvements of natural history, perceive traces of harmony, connection, and design, of which they were totally ignorant?

“ Lord, how manifold are thy works! in wisdom hast thou made them all!” was the exclamation of an inspired monarch; but it requires neither the lights, nor the glowings of inspiration, to excite the same emotion in the bosoms of the sons of reason.

When we behold a curious piece of mechanism, we are ready to acknowledge the ingenuity of the artist; but how must we be astonished when we examine into those of the Infinite Architect?

The observations which have been made in these latter days, by the help of the microscope, since we had the use and improvement of it, discover a vast difference between natural and artificial things; whatever is natural, viewed through that, appears exquisitely formed and adorned with all imaginable elegance and beauty; there are such inimitable gildings in the smallest seeds of plants, but especially in the parts of an animal, in the head and eye of a small fly; such accuracy, order, and symmetry in the frame of the most minute creatures, as no man could conceive, without seeing them; whereas the most curious works of art, the sharpest and finest needle, appear blunt and rough; the most accurate engravings or embossments seem rude, bungling, and deformed work; so vast a difference is there between the skill of nature and the work of art.

This inferior sphere, in some light, appears to be the temple of the Creator, and every creature or production which appears, either above or under its surface, an incitement to acknowledge his paternal hand, and a motive to raise our hearts, above this world, upon the wings of gratitude. If we begin with the Psalmist, "Praise him sun and moon, &c." we should conclude with him likewise, "Praise the Lord, O my soul, and let every thing that hath breath praise the Lord; for he spake the word, and they were made, he commanded, and they were created!"

These are thy glorious works, Parent of good,
 Almighty, thine, this universal frame,
 Thus wond'rous fair, thyself, how wond'rous then !
 Unspeakable who sits above these heavens,
 To us invisible, or dimly seen,
 In these thy lowest works, yet these declare
 Thy goodness, beyond thought, and pow'r divine !

SUN. What a vast stupendous globe is the sun,
 the fountain of light and heat ! and the Great
 Creator hath so wisely and indulgently order-
 ed the distance between the earth and sun,
 that the sun's light and heat are incomparably
 accommodated to the state and temper of all
 things here below, and the world is well fitted
 for habitation, well provided with every thing
 that may minister to the support, the comfort,
 and pleasure of its inhabitants.

By those indulgent rays all things are en-
 lightened, warmed, and comforted ; vapours
 made to rise, for the forming of clouds and
 rain ; trees and plants are thereby enabled to
 put on their verdure and gaiety, and to yield us
 the benefit and pleasures of their grain and fruit :
 By the presence of this great fountain of light
 and heat, we, and even nature too, are awake
 and excited ; these works proclaim, in every
 part, that Great Being that made them ; and
 how doth the sun's absence in winter change
 the whole face of nature, divest vegetables
 of their gay attire, force animals to places of
 shelter and safeguard, and give an aspect of me-
 lancholy to all things. Now it is indisputably
 true, that if the sun had been placed much
 nearer.

nearer to the earth than we find it, nothing less could have been expected than a total conflagration thereof; and in case it had been much more remote, the earth could not have produced its fruits for the support of its inhabitants. Can any one imagine, that it is without design that this great and terrible fire, among so many numberless places that it might have possessed, in the great space of the universe, with respect to the earth, should be fixed just there only, where it can cause so much good to our own globe?

And as for this globe of the earth, it is very visible that either that moves round in twenty-four hours, or that the sun and all the heavens move round it in the same time: And which of these two is most agreeable to the usual course and methods of nature, which performs all its works in the most compendious facile way, let every one judge: And is it not far the most compendious, ready, and easy way, that the terraqueous globe should wheel about in twenty-four hours, than that so many vast bodies of the heavens should be turned about it in that time? Without this motion, this world, or a great part of it, would scarce be habitable; it would neither agree to the state of man or any other animals, nor to that of vegetables, or indeed any other creature; for one half of the globe would be burning up, at least too much drying and exhausted with the beams of the sun, whilst the other would be immersed in and deadened
with

with too long night; and, in such a case, how could the great works of nature, so serviceable to the world, be performed? How, for instance, could the vapours be raised to supply the earth with cooling clouds and fertile showers? How could the winds be excited to fan the atmosphere with their pleasant and healthful gales? How could the tides be produced, which, by their constant agitations, keep the waters sweet and clean, and prevent their infecting the world? And, as the course and functions of nature would be thus affected, so would the state of the creatures be no less: For, how could those of the vegetable kingdoms be animated and excited by the kindly heat of the day, and then again tempered and invigorated by the no less kindly dews and influences of the night? How could men, and all other animals, dispatch their business, gather their food, and perform all the various labours and offices of the day, and then recruit and repose themselves with rest and sleep, and whatever else may be owing to the salutiferous influences of the night and absence of the sun?

That solar shadow, as it measures life,
 It life resembles too, life speeds away,
 From point to point, tho' seeming to stand still,
 The cunning fugitive is swift by stealth:
 Too subtle is the movement to be seen;
 Yet soon man's hour is up, and we are gone.

Now, by these motions, besides the preventing those great inconveniences which would certainly come to pass, if one continual burning season, or an all-congealing cold should always prevail
 in

in the same region of the world, we find that most of the inhabited places of the earth are enlightened and warmed according to the manner and measure that is most agreeable to the nature of the people and fruits that belong to it, whilst, in the mean time, this general benefit is enjoyed by all mankind, though dispersed over the whole face of the earth by the means of trade and shipping, by which every nation may abound with those commodities that are not the natural produce of its own country.

Besides what has been already shewn to be so wonderful in the direction of the sun in its daily and yearly course, let any one judge, whether it is without a determinate end and purpose, that the rays of the sun passing from a thinner to a thicker medium, are refracted and turned away from their due course, in order to produce the twilights of evening and morning; whereas otherwise, upon the setting of the sun in all places, a bright day would be changed into a pitch-dark night; and it may easily be perceived that it is so ordered, on purpose to be useful to man, the organs of whose sight would be very much prejudiced, if the transition from much light to much darkness were made all at once. The Almighty, to convince Job of the narrowness of his understanding, speaks to him in the following words:—"Hast thou commanded the morning, since thy days; and caused the spring to know his place?" Which question seems to carry this meaning along with it,

it, Did you ever truly understand the different thickness of the air, both in your own and other climates of the world ; or the greater or lesser refraction proceeding from thence, and consequently the variations of the morning and evening twilights, which are the result thereof ; or have you any command or direction over it ? To convince Job of the impracticability thereof, was the design of the Almighty.

I send thee not to volumes for thy cure,
Read nature, nature is a friend to truth,
Nature is Christian, preaches to mankind,
And bids dead matter aid us in our creed.

Among the several kinds of beauty, the eye takes most delight in colours ; we no where meet with a more glorious or pleasing show in nature, than what appears in the heavens at the rising and setting of the sun, which is wholly made up of those different stains of light that shew themselves in clouds of a different situation.

The fancy is infinitely more struck with the view of the open air and skies that passes through an arch, than what comes through a square, or any other figure ; the figure of the rainbow does not contribute less to its magnificence, than the colours to its beauty, as it is very poetically described by the son of Sirach : “ Look upon the rainbow, and praise him that made it ; very beautiful it is in its brightness ; it encompasses the

the heavens with a glorious circle, and the hands of the most High have bended it."

Why is the moon, which is much smaller MOON. than the globe of the earth, (and supposed to be the least of any of the heavenly bodies) placed at no greater distance from it? And, since the universe is so large, why is this place, among millions of others, just chosen out, whereby it is best suited to render such service to those who inhabit the earth?

Here again appears the great wisdom of the Creator, by which this continual monthly sun (as one may call it) is secured, to the end that mankind may not so often be deprived of the use thereof.

Freethinkers very inconsiderately start an objection here, namely, That if light be so agreeable, and darkness so terrible, and if all this be so ordered by a wise Governor of the world, why do these eclipses, or obscurities, of the sun or moon come to pass, since night alone seems sufficient to furnish man, tired by the labours of the day, with refreshing rest? Now, to answer this, and to shew that in eclipses, how dark soever they may be, the most adorable wisdom of God is displayed; from hence it appears, that the moon receives her light from the sun, because, when it has passed through the earth's shadow after its eclipse, it appears again in full lustre, as soon as the rays of the sun can fall

fall upon it. And further, those eclipses are, as it were, fixed land-marks in the series of ages and histories; from whence, as from an indisputable root of time, a new chronology may take its date, and others, in which there is any uncertainty, be likewise rectified thereby. But the usefulness of the moon's eclipses appears yet more particularly, in determining, in some measure, the longitude of the earth, so that the truth of many maps and descriptions of the earth may be examined and corrected thereby, as has often actually happened, which is not only of very great advantage to geographers, but also of the utmost importance to so many seafaring people, whose preservation and lives too often depend upon the goodness or badness of a chart.

Here again appears the wisdom of the Great Creator, that the light of the moon is neither hot or cold: How advantageous it is to hot countries that it produces no heat! If it was otherwise, part of the earth would be barren, and soon burnt up, since the descending dews of the night, by which it is now moistened, would then cease to fall down, and this heat of the moon would draw its vapours upwards, and we should suffer many inconveniences from thence, which are now prevented by our Great Creator, who directs all things with infinite wisdom.

The best and most learned modern astronomers do generally suppose, that the great multitude

tude of fixed stars we see, or imagine to be in the universe, are so many suns, and that they are so there is great reason to conclude, and that they are only diminished in appearance by their prodigious distances from us ; and if the fixed stars are so many suns, certainly they minister to some grand uses in the universe, far above what hath usually been attributed to them ; and what more probable uses than to perform the offices of so many suns ? And this is a far more probable and suitable use for so many suns, so many glorious bodies, than to say they were made only to enlighten and influence our inferior globe. The immensurable magnitude of the fixed stars is such, that the astronomers have not been able hitherto to communicate any thing to us more than mere conjecture, nor have they been able to answer all the questions concerning the magnitude and distance of the fixed stars ; the stars also of the first magnitude, though viewed by a telescope, appear so little, that no measure of their bigness can be found out ~~by~~ this sort of observation, and as long as the distance of the fixed stars from the sun or from the earth remains immensurable, the magnitude of the starry heavens, though considered as an orb about the sun or earth, which cannot yet be proved, will always remain likewise immensurable.

Now, that the holy scriptures speak here according to the strictest truth, as they do also about many other things of nature, every man must own, who will consider that passage in
Proverbs

Proverbs xxv. 3. "The heaven for height, and the earth for depth, and the heart of kings is unsearchable." In like manner, when the scriptures would propose any thing which surpasses all conception, they compare it with the height of heaven, as in Psalm ciii. 11. "As the heaven is high above the earth, so great is his mercy towards them that fear him." But the expression of the prophet Jeremiah is yet more full and emphatical, chap. xxxi. 37. "If heaven above can be measured, and the foundations of the earth searched out beneath, I will also cast off all the seed of Israel." From whence we may clearly infer, that neither is heaven, or the firmament, capable of being measured. And further, what is more remarkable, that whereas all other luminous objects are magnified by telescopes, (the astronomers principal instruments) the fixed stars, even through them, appear less than when seen with the naked eye, and therefore can be of no use in measuring the starry heaven, as it might have been expected, when the planets which, to the naked eye, appear no bigger than the fixed stars, by means of the telescope appear very large and distinct; so that this word pronounced by the Creator, namely, "That the firmament is immeasurable," continues in full force, and shews the divine original of the heavens; thereby, as it were, setting bounds to the labours of the following ages, and giving limits to astronomy. The impossibility of determining the magnitude and distance of the stars, is an effect of the adorable wisdom

wisdom of their Great Creator, who, knowing that if they were capable of being measured, how great soever the extent thereof might be, yet, from the habit and custom of mentioning the same, the wonderfulness thereof would be much diminished, he therefore thought it necessary to make them immeasurable, and to put them out of the reach of all human endeavours, at least the Divine Authority of the holy scriptures is evident from hence; by which, even from the first ages of the world, the magnitude of the stars is determined to be absolutely inscrutable, and consequently shewn, even then, where the efforts of man in following ages should find their bounds, notwithstanding their utmost endeavours to the contrary, see Job ix. 9, 10, where having first said of the fixed stars in the 9th verse, "which maketh Arcturus, Orion, and Pleiades, and the chambers of the south," he continues in the 10th verse to say, "which doth great things past finding out, yea, and wonders without number." Besides the above quoted text, this innumerability of the stars has been likewise asserted in several other places of scripture: Thus God says to Abraham, Gen. xv. 5. "Look now toward heaven, and tell the stars, if thou be able to number them: And he said unto him, so shall thy seed be." Now let freethinkers tell us, how is it that Moses and Job, if they had not been divinely inspired, could in their times have pronounced the stars to be innumerable, since it was so many ages after that this excessive multitude, upon
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the discovery of telescopes, has been experimentally known to mankind; and whether it be by mere chance, or ignorant laws of nature, and without any directive power, that such vast globes (as the planets) should each of them move about the sun in a different plane, and that every one should have continued his course, for so many thousand years, without ever failing, and invariably preserved the same obliquity, though the swiftness of their motion is so astonishingly great.

The spacious firmament on high,
With all the blue ethereal sky,
And spangl'd heavens, a shining frame;
Their Great Original proclaim.
The unwearied sun, from day to day,
Does his Creator's pow'r display;
And publishes to every land,
The work of an Almighty hand.

Soon as the ev'ning shades prevail,
The moon takes up the wond'rous tale,
And nightly to the list'ning earth,
Repeats the story of her birth:
Whilst all the stars that round her burn,
And all the planets in their turn,
Confirm the tidings as they roll,
And spread the truth from pole to pole.
What though, in solemn silence, all
Move round the dark terrestrial ball?
What tho', nor real voice nor sound
Amidst their radiant orbs be found?
In reason's ear they all rejoice,
And utter forth a glorious voice,
For ever singing as they shine,
The hand that made us is divine.

Let me now ask the unhappy sceptic, whether or no he does not here discover the divinity

nity of the holy writ? For unless he who dictated it were an omniscient God, and did know all the counsels of men, and even the issues thereof to the end of ages, how can it be imagined that an author of any sense would venture positively to advance such an assertion as this concerning the immensity of the heavens, which (notwithstanding the zeal and restless attempts of all sorts of men, and the charges and expences bestowed by such great potentates in this inquiry; and notwithstanding that diligence whereby other matters, which at first seemed incredible, have been at length found out) remains good, even after so many ages to this day, as heaven continues as much immeasurable as ever; and whether he be not in danger of losing himself in the contemplation of so inconceivable a greatness, of so glorious a structure, in which the footsteps of the Divine Builder do so manifestly appear?

And can such well-contrived, such useful motions, that the world could not subsist without, that nature could not do its grand works without, can these be other than the fiat of an infinitely indulgent, as well as wise Creator? Could this consonancy be so universal among all the globes that fall within our view? Could their periods and distances be in the same due proportion all the universe over, their motions all so alike, had they not had the same Contriver and Maker? For, without this Almighty Guide and Manager, how is it possible that

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all these vast unwieldy masses should continue their beneficial motions throughout all ages ; should perform their useful stages without any the least intermission, interruption, or disorder that we know of, except some hours which we read of in Joshua and Hezekiah's time ? After all this, let the unhappy freethinker consider, since all these heavenly bodies are driven, or attracted, with so dreadful a force, whether it happens without wisdom that they have, for so many ages, moved according to the laws given them at their creation, and have not interfered with or incommoded each other ; but, instead of this, every globe throughout the whole creation is, as far as it is possible for us to observe, set at such a due distance as not only to avoid all violent concourses, but also not to eclipse or shade one the other wherever it may be prejudicial, or indeed not useful and convenient, or so as to hinder one another's kindly influences.—In an eternity what scenes shall strike, adventures thicken, novelties surprise ! What webs of wonder shall unravel there ! What full day pour on all the paths of heaven !

As I was walking about sun-set in the open fields, the night insensibly fell upon me : I at first amused myself with all the richness and variety of colours which appeared in the western parts of heaven, in proportion as they faded away and went out ; several stars and planets appeared, one after another, till the whole firmament was in a glow ; the blueness of the
aether

æther was exceedingly heightened and enlivened by the season of the year; and, by the rays of all those luminaries that passed through it, the milky way appeared in its most beautiful white: To complete the scene, the full moon rose at length in that crouded majesty which Milton takes notice of, and opened to the eye a new picture of nature, which was more finely shaded and disposed, amongst softer lights, than those which the sun had before discovered to us. As I was surveying the moon walking in her brightness, and taking her progress among the constellations, a thought rose in me, which, I believe, very often perplexes and disturbs men of serious and contemplative natures: David himself fell into it in that reflection, "When I consider the heavens the work of thy fingers, the moon and the stars which thou hast ordained, what is man that thou art mindful of him, or the son of man that thou regardest him!" In the same manner, when I considered that infinite host of stars, or, to speak more philosophically, of suns, which were then shining upon me, with those innumerable sets of planets or worlds which were moving round the respective suns; when I still enlarged the idea, and supposed another heaven and suns of worlds rising still above this which we discovered, and those still enlightened by a superior firmament of luminaries, which are planted at so great a distance, that they may appear to the inhabitants of the former as the stars do to us. In short, while I pursued this thought, I could not but

reflect on that little insignificant figure which I myself bore amidst the immensity of God's works.

How eloquently shines the glowing pole !
 With what authority it gives its charge,
 Remonstrating great truths in stile sublime.
 Tho' silent, loud ! heard earth around, above,
 A language worthy the Great Mind that speaks !
 Preface and comment to the sacred page,
 Which oft refers its reader to the skies,
 As presupposing his first lesson there.

Having set forth the prodigious magnitude of the heavenly space, and of the bodies therein contained, let us consider what influence these things ought to have upon us : And, in short, who can behold the regions above, and consider the things therein contained, and at the same time not own them to declare the glory of God ? Who can view that immensurable firmament in which those bodies are, and not acknowledge his handy-work ? We admire (as justly we may) the vast bulk of this our own globe ; but, when we consider how much it is surpassed by most of the heavenly bodies, what a point it degenerates into when seen from the heavens, this gives us a just and noble idea of the infinite Creator's works, such as is worthy of God, and such as may make us slight this world, and cause our thoughts and desires to soar among the heavenly glories, which, although viewed only here upon the earth at an amazing distance, we find enough to entertain our eye, to captivate our understanding, to ex-
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cite our admiration and praises of the infinite Creator and Contriver of them.

Observe how regular the planets run,
 In stated times, their courses round the sun;
 Different their bulk, their distance, their career,
 And different much the compass of their year:
 Yet all the same eternal laws obey,
 While God's unerring finger points the way.

Let us next descend to the earth, and take EARTH.
 a view of the terraqueous globe, a most stupen-
 dous work: Let us cast our eyes here and there,
 inspect every part thereof with the greatest ac-
 curacy, search out the inmost secrets of any of
 the creatures, still we find them to bear testimo-
 ny to their Infinite Creator; and, so far are we
 from being able to find any defect in them, that
 the farther we see into them the more we shall
 be astonished.

The figure of our globe being spherical, is
 far the most beneficial to the winds and motions
 of the atmosphere, and doth manifest it to be a
 work of astonishing contrivance: For besides
 that this figure is most agreeable to a world in
 motion, as being at a due distance from the centre
 of motion and gravity, so, without this figure,
 there could have been no such comfortable and
 agreeable alterations of day and night, and heat
 and cold, as now there are; but some parts must
 have been for too long a time skreened from the
 kindly approaches of the sun and moon, and
 consequently have lain under too long and un-
 comfortable a darkness, and been chilled with

a miserable cold. Thus it is evident, that our own globe received its figure by the direction of the infinitely wise Architect of all things, and we have reason to conclude the same of all the rest of the globes of the universe, inasmuch that they agree with ours in other things as well as in their figure, so far as we have any knowledge of them and their state. This globe is of such a prodigious bulk, containing many thousand millions of miles, a work too grand for any thing less than a God to make, who, as Job expresses it, “ He hangeth the earth upon nothing.”

The motions this terraqueous globe hath are round its own axis, and round the sun, the fountain of light and heat. Another thing very considerable in our globe is, its place and situation at a due distance from the sun, and from its neighbouring planets of the solar system, and from the fixed stars. That so vast a body as the earth and waters should be moved at all, that it should undergo two such different motions as the diurnal and annual are, and that these motions should be so constantly and regularly performed, for near 6000 years, without any alteration ever heard of (except in Joshua and Hezekiah's time); these things do manifestly argue some Divine Infinite Power to be concerned therein; but especially if to all this we add the wonderful convenience, yea absolute necessity of these circumvolutions to the inhabitants, yea all the produce of the earth and waters; for to one of these, as I observed before, we owe the comfortable

fortable changes of day and night, the one for business, the other for repose; the one for man, and most other animals, to gather and provide food, habitation, and the other necessities of life; the other to rest, refresh, and recruit their spirits, wasted with the labours of the day; to the other of those motions we owe the seasons of summer and winter, spring and autumn, the periodical revolutions of the earth being an excellent providential contrivance for those useful and necessary mutations we have of the before-mentioned seasons of the year.

Of all the seasons, there is none that can vie with the spring for beauty and delightfulness: It bears the same figure among the seasons of the year that the morning does among the divisions of the day, or youth among the stages of life: The English summer is pleasanter than that of any other country in Europe, on no other account, but because it has a greater mixture of spring in it. The mildness of our climate, with those frequent refreshments of dews and rains that fall among us, keep up a perpetual chearfulness in our fields, and fill the hottest months in the year with a lively verdure. In the opening of the spring, when all nature begins to recover herself, the same animal pleasure which makes the birds sing, and the whole brute creation rejoice, rises very sensibly in the heart of man. The creation is a perpetual feast to the mind of a good man; every thing he sees cheers and delights him. Providence has imprinted so many smiles

smiles on nature, that it is impossible for a mind, which is not sunk in more gross and sensual delights, to take a survey of them without several secret sensations of pleasure. Natural philosophy quickens this taste of the creation, and renders it not only pleasing to the imagination, but to the understanding: It does not rest in the murmur of brooks, and the melody of birds in the shade of groves and woods, or in the embroidery of fields and meadows; but considers the several ends of Providence which are served by them, and the wonders of Divine Wisdom which appear in them: It heightens the pleasure of the eye, and raises such a rational admiration in the soul as is little inferior to devotion. I look upon the pleasure which we take in a garden (of which I shall speak more largely in this Treatise) as one of the most innocent delights in human life. A garden was the habitation and employment of our first parents before the fall: It is naturally apt to fill the mind with calmness and tranquillity, and to lay all its turbulent passions at rest: It gives us a great insight into the contrivance and wisdom of Providence, and suggests innumerable subjects for meditation.

Youth of the year! delightful spring!
 Thy blest return on genial wing,
 Inspires my languid lays:
 No more I sleep in sloth supine,
 While all creation at thy shrine,
 Its annual tribute pays.

Escap'd from winter's freezing pow'r,
 Each blossom greets thee, and each flow'r,
 And foremost of the train,

By nature (artless handmaid) drest,
The snow-drop comes in lillied vest,
Prophetic of thy reign.

The lark now strains his tuneful throat,
And every loud and sprightly note,
Calls echo from her cell.——

The bright-hair'd sun with warmth benign,
Bids tree, and shrub, and swelling vine,
Their infant buds display.

Again the streams refresh the plains,
Which winter bound in icy chains,
And sparkling, blest his ray.

Life-giving zephyrs breathe around,
And instant glows th' enamel'd ground
With nature's varied hues.

Not so returns our youth decay'd,
Alas ! nor air, nor sun, nor shade,
The spring of life renews.

The sun's too quick revolving beam,
Apace dissolves the human dream,
And brings th' appointed hour.
Too late we catch his parting ray,
And mourn the idly-wasted day,
No longer in our pow'r.

Then happiest he, whose lengthen'd sight,
Pursues by virtue's constant light,
A hope beyond the skies !
Where frowning winter ne'er shall come,
But rosy spring for ever bloom,
And suns eternal rise,

Notwithstanding the objections made by some inconsiderate men, that mountains have neither form nor beauty, nor consist of any proportion of parts, nor have the least footsteps of art or contrivance, they are a noble, useful, and necessary part of our globe : Could the body of the whole earth, or indeed the whole universe, be submitted to the examination of our senses ; were

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it not too big and disproportionate for our enquiries, too unwieldy for the management of the eye and hand, there is no question but it would appear to us to be a most curious and well-contrived frame; we should see the same concatenation and subserviency, the same necessity and usefulness, the same beauty and harmony in all and every of its parts, as what we discover in the body of every single animal. The more extended our reason is, and the more able to grapple with immense objects, the greater still are those discoveries which it makes of Wisdom and Providence in the works of the Creation.

The earth daily brings forth from its bowels an infinite number of herbs, flowers, plants, shrubs, corn, and trees for various purposes, and has done the same for many thousand years. Can any one, without astonishment, reflect, that since so much earth has been made use of for so many ages, yet in so great a series of time it has never failed, nor entirely lost its fecundity? We also cannot but acknowledge the bounty and goodness of the Almighty Creator to mankind, by taking care, even for ornaments, by producing for that purpose out of the earth diamonds and other precious stones, of so noble a lustre, the chief of which do excel in firmness and incorruptibility most other stones.

Let us next consider the great use of water, that wonderful indulgent blessing of the Great
Creator

Creator to all his creatures. In case there had been no water in the world, all mankind, and most of the other living creatures, even in a superfluity of air and food, would certainly soon perish, since thirst, if it be not extinguished, is no less fatal than hunger itself. Without water the earth could not be rendered fruitful, nor any tree or plant spring out of it: From whence have fruits, as grapes, cherries, gooseberries, &c. their agreeable juices, if it were not from water, which, by the concurrence of other particles, acquires so many various tastes, and produces so many pleasant drinks and wines. Water is ranked by most philosophers amongst the natural fluids; but some think improperly, if we look back to the primary and original constitution of it, which it is supposed was ice, and this is water still: For as gold is gold, whether in consistence or in fluidity, so is ice water congealed, and water is melted ice.

It is certain, that without a proper quantity of heat to keep water in a state of fluidity, it will naturally form itself into ice; for we see that in temperate climates, when, through the excessive cold of the air, the thermometer drops down to what the philosophers call the freezing point, it will undoubtedly freeze; and in the northern parts, and upon the tops of high mountains where there is not a sufficient degree of heat to dissolve it, water remains for ever in its natural condition of ice; therefore it may not be an improbable conjecture, that at the beginning,
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in the chaotic confusion of the earth, the waters were shut up in a solid frost; for there could not be the least glimmering of heat to soften them, because darkness was upon the face of the deep, and the first preparative we read of was, that the spirit of God, that is, a violent wind, moved upon the face of the waters, probably to bring all, or the greater part of them, into such a state of dissolution, as might make them fit for the several uses to which he intended to apply them in the subsequent works of the creation: And to corroborate this opinion, the Psalmist expresses himself in the same language, with relation to the common frosts, when he says, that "God sendeth out his word and melteth them; he bloweth with his wind and the waters flow." Again, how wonderfully kind is Providence by preserving the water most commonly in such a fluid state, that it may run among the hills for the service of man and beast, for the continual support and refreshment of every animal and vegetable; and again, locking up some parts of it in some places, and at some seasons, in its primitive form of ice, or wrapping it in fleecy snow for many wise and good purposes, with which the husbandman as well as the philosopher is acquainted.

And as to the distribution of the waters, many of them are carried through such large tracts of land, and to such prodigious distances, that it is a great wonder that the fountains should be high enough, or the seas low enough to afford
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so long a conveyance, some of which are said to run some thousand miles from their fountains to the sea; and indeed such a nazing conveyances of the waters make it manifest, that no accidental currents or alterations of the waters, no art or power of man, nothing less than the Almighty could ever have made or found out so long and commodious declivities and channels for the passage of the waters.

The sea does not only surround the whole earth, in order to receive the rivers and fresh waters, and preserve them from corruption by its salts, but likewise is the means by which commerce and traffick are carried on, and each part of the globe, that has the advantage of lying near the sea, can enjoy, by the assistance of shipping, all the advantages and conveniences of the most inland countries; so that the Great Creator has not only taken care of those that lie near the sea, but also of all that live in the very heart of the continent, by the means of rivers, or the breaking of the ocean, many leagues up within the continents.

And if ever the terrible power and adorable wisdom of God, who orders all things in the world, appears in its greatest lustre, it must be confessed to do so in the astonishing force of the water by bearing such large ships laden with such immense burdens and weights, which, if duly considered, is alone sufficient to prove the presence of a God who is dreadful in his power,
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and great in his wisdom and goodness : All this would appear, even to a demonstration, if inconsiderate men would but divest themselves of that careless manner in which custom makes them look upon all, even the greatest things, without attention.

To add something farther, to give such as are not entirely hardened an irresistible proof of a God that rules the sea, can any one see, without the utmost astonishment, that so great, so extended a space, in which so dreadful a quantity of water is contained, as the ocean, does not overflow the dry land, especially where it is so low as Holland, since there is such a concurrence of circumstances that seem to render it unavoidable, unless a greater Power and Wisdom had intervened ?

That it is to the hills that the fountains owe their rise, and the rivers their conveyance, is generally believed ; but whether their origin be from condensed vapours, as some think, or from rains falling, as others ; or whether they are derived from the sea, by way of attraction, percolation, or distillation ; or whether all these causes concur, or only some, still the hills are the grand agents in this prodigious benefit to all the earth, those vast masses and ridges of earth serving as so many huge alembicks, or cola, in this noble work of nature ; and consequently that those vast masses and lofty piles are not, as they are charged, such rude and useless excrescences
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of our ill-formed globe; but the admirable instruments of nature, contrived and ordered by the Infinite Creator to do one, of its most useful works, and to dispense this great blessing to all parts of the earth, without which neither animals could live, nor vegetables scarcely grow, nor perhaps minerals, metals, or fossils receive any increase: For was the surface of the earth even and level, and the middle parts of its islands and continents not mountainous and high (as now they are) it is most certain there could be no descent for the rivers, no conveyance for the waters, but instead of gliding along those gentle declivities, which the higher lands now afford them quite down to the sea, they would stagnate, and perhaps stink, and also drown large tracts of land. And now considering what hath been said concerning the use of hills, there are two or three acts of the Divine Providence observable therein; one is, that all countries throughout the whole world should enjoy this great benefit of mountains placed here and there, at due and proper distances, to afford these several nations this excellent and most necessary element the waters: And now certainly it must appear evident to any considerate person, that Almighty God was no idle spectator, nor unconcerned in the ordering of the terraqueous globe, as bold charges against it do infer; that he did not suffer so grand a work as the earth to go unfinished out of his Almighty Hand, or leave it to be ordered by chance; it is therefore fitter for such finite, weak, ignorant beings

beings as we are, to be humble and meek, and conscious of our ignorance, and jealous of our own judgment when it thus confronteth Infinite Wisdom; so admirably well-tempered is our state, such a harmony is there throughout the creation, that if we will but pursue the ways of piety and virtue which God hath appointed, we may find sufficient means to make us happy here, and eternally happy hereafter. If the earth were mathematically round, the rains would seldom fall where they were wanted; and let the freethinker stop here a little, and seriously consider with himself the astonishing contrivance of the Great Creator, in furnishing the earth with a sufficient quantity of water from the heavens, and to collect the vapours in that vast ocean of air, and make them descend upon those parts of the earth where they are chiefly wanted: For instance, let a man cast his eyes only upon the island of St. Thomas, which is under the line, or upon that of St. Helena, lying between the tropics, where the heat of the sun is exceeding strong, since all the vapours that ascend from the surrounding seas seem to be more likely to fall down again directly into the same, than upon either of those islands, the solid parts of which reflect the rays of the sun with greater force than the fluid parts of the sea, can any one think that it happens without the wise design of the Great Creator, that there are high mountains upon those islands, where these vapours are collected in so vast a quantity, that they are capable of rendering whole brooks and rivers sufficient to provide

vide drink for animals, nourishment for plants, and fertility to the earth, in such burning regions, in great abundance.

Let any one tell us how it is possible that such innumerable rivers, and amongst them many great ones, do day and night continually discharge into the sea such an inconceivable quantity of waters, and have done the same for so many ages without ceasing, and yet have not over-filled the sea, nor forced it to exceed its bounds and overflow the land; this would be unintelligible to every one, were it not all these waters did constantly observe the circulation I have shewn before, whereby those waters that are brought into the sea by the rivers, and increase the same, are again attracted by the heat of the sun, and do rise up into the air under the form of vapours, and there they, or a great part thereof, are collected upon the tops of mountains, or descend again in rains, and become little brooks, which, by their union, make up the same rivers that carried them into the sea, thus performing their continual circulation from the land to the sea, and from the sea through the air into the land again. Now, can any one imagine that it comes to pass, by mere chance, that exceeding high mountains are placed in those parts of Africa where the countries are burnt up with the sun, and that from the said mountains there flow such mighty streams, which, being collected together, make the sea or lake called Zaire, from whence proceeds the river Nile,

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which runs through all Egypt, discharges itself, by many channels, into the Mediterranean sea? The land of Egypt, which is flat and without any mountains, (as some historians say) is seldom or never watered by rains: It lies in the middle of dry countries, and is almost surrounded with the most barren deserts, insomuch, that of itself it is entirely unfruitful, and consequently would be uninhabited, did not the river Nile yearly swell and rise over its banks and overflow all the country, so that the towns that are built upon any eminences appear like so many islands, whilst the flat country lies under water; and by such inundations this country, which is otherwise dry and almost burnt up, becomes as fruitful as any other that is usually watered with rain; the waters are wont to leave such a slime and mud behind them, as being dried renders the country (which in its own nature is one of the most barren parts of the world) extraordinary fruitful, and many times a magazine and granary for other nations that have been distressed by famine. What a wonderful provision is there made, by the Almighty Creator, to supply the want of rain, that those countries which stand in most need of being watered, may enjoy a greater share than others; such great bodies as the ridges of hills and mountains are placed in or near the same, the use of which, as has been observed before, is to intercept the watery vapours, floating in the air, to collect them upon their summits or tops, to derive them down from thence, and so to furnish such a quantity of

of water as may compose the requisite brooks and rivers, which contribute so much to the benefit of the earth and the inhabitants thereof, and which running down from these hills from whence they derive their source and beginning, they moisten the surrounding lands, which would otherwise be barren through heat and drought, and render them fit to support their inhabitants with the necessaries of life. Let the unhappy freethinker consider this great collection of waters, these vastly extended seas, and say, whether in case the same did consist of nothing but fresh waters, brought into them by the rivers and rains, he can suppose, that it would have been possible for those waters, after having been exposed so many ages to the action of the air and sun, to have been preserved from corruption; and if that had happened, how grievously the whole mass of air, surrounding the globe of the earth, would have been infected, and produced innumerable and fatal diseases. To remedy this, the Almighty has (as some authors say) placed at the bottom of this great receptacle such quantities of salt as are capable of converting all the fresh waters that run into it into salt waters, and thereby preserve them from corruption, as well as to prevent the waters in many places from freezing: For if a frost should happen as easily in the sea as it does in rivers and fresh waters, it would not only render the sea many times impassable, but, by stopping ships, cause an infinite number of people to perish by hunger.

Now let me once more ask these inconsiderate unhappy men, whether they think these things come to pass without any direction or determined purpose? Why then is not the sea quite exhaled and dried up? Why is it not increased by the rivers, either of which would produce the certain destruction and ruin of the whole earth? And whence comes it, that the sun has continued for so many ages in such an exact degree of heat, as to leave in the sea always about the same quantity of water, without our being able to discover any remarkable diminution or augmentation thereof?

Besides, if we contemplate this dreadful abyss in its wild motions when excited by storms, or its waves rising to incredible heights, and threatening to overflow and swallow the dry land, can we then think it is by chance, that the mad waves of this terrible heap of waters are to this day confined within their bounds? These are secrets which must be adored, but cannot be found out: It is properly in the sea that God is admirable and incomprehensible; 'tis there he is pleased to shew his wondrous and marvellous works.

The obedience of the sea has something in it very wonderful; for it may be said, that when she is angry, she seems ready to drown the whole earth; yet she stops quite short at the borders of it, and those mountains of water, which threaten the world with a second deluge, are
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broke upon the sands ; and how furious soever the sea may be, approaching her borders, she sees an order from God there written, which forbids her to pass any further, and she then respectfully retires, bending her waves as it were in adoration of the Lord, who has fixed her bounds.

The order of God is conceived in most express terms in the holy scriptures : “ Hitherto shalt thou come, but no further, and here shall thy proud waves be stayed,” Job xxxviii. 11. Which words are so well fixed upon the shore, that nothing can efface them : What God writes upon the dust is immutable, but that which man writes upon marble and brass is not so : Time which consumes all, which destroys by little and little triumphal arches, obelisks, and mausoleums, abolishes every day the names and titles which are engraved upon those insignificant monuments.

The sea is the image of the world, and of the vanity of human things : Those calms and storms which hourly succeed, those waves which incessantly push and dash against each other, those favourable, those contrary winds, those happy voyages, and those wrecks which frequently happen within the port, is not all this a faithful picture of what passes in life ? Is there a sea more uncertain than the courts of princes ? or is there one more perilous ? To which side soever you turn, there are nothing but shelves, the more dangerous for being covered, the most

favourable wind is sometimes the most contrary; and if we look upon the world, in the relation it has to the sea, we have every thing to fear from it; even from the most perfect calm trust not in it, have no dependence on it, though that sea be more tranquil and smooth than a standing water; though no other than a sweet zephyr blows upon it, there are mountains hid under so even a surface, the enemy, the danger is within: This great calm is a tempest, and from thence it comes, that those who trust in these fine appearances are frequently deceived.

As Cicero observes, survey with the eye of your mind the face of the whole earth and the spreading ocean; here you will behold vast tracts of land, covered with corn; there hills and mountains, crowned with woods and forests; here spacious fields and meadows, with cattle grazing; there ships of different bulk, cleaving the waves with almost incredible swiftness; and if not content with viewing its surface, you penetrate into the bowels of the earth, you will there find concealed abundance of things profitable to us, which, as they were designed for the use of man alone, are by man alone discoverable.

SURVEY
of MAN.

Next let us take a survey of man: Man, who may justly claim the precedence and superiority in the animal world, given to him by his Great Creator, seems not only to be possessed of every source of pleasure which any
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of them enjoy, but of many others which they are altogether strangers to: If he is not the only animal possessed of reason, he has it in a degree so greatly superior, as admits of no comparison: The pleasures of the imagination, the pleasures arising from science, from the fine arts, and from the principle of curiosity, are peculiar to the human species; but above all, the moral sense, with the happiness inspired by religion, and the various intercourses of social life, is their distinguishing characteristic. Accordingly we find a striking difference in the external make of man, and exactly such a combination of parts as we should expect in such a creature, and is perfectly calculated to answer the exigencies, and afford the desired comforts of his state: His erect posture, which is far the most commodious for a rational creature, for without this posture he could not have so readily turned himself to every business and on every occasion; by this situation he can cast his eyes upwards, downwards, and round about him; he hath a glorious hemisphere of the heavens, and an ample horizon on earth, to entertain his eye; to this may be added the nice equipoise of the body, the wonderful concurrence of, and ministry of the prodigious number and variety of muscles placed throughout the body for this service, that they should so readily answer to every posture, and comply with every motion thereof, without any previous thought. Man's commanding beauty, and his advantages above the rest of the creation, are evident: He wears
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the diadem of this terrestrial empire, and stands supremely dignified above the other orders of this lower sphere: His grand distinction is comprehended in this, that he is formed with a rational mind, invested with an intellectual spirit, which is the image of God, who has been pleased to "teach him more than the beasts of the earth, and has made him wiser than the fowls of the air." I will begin with the soul of man, which is his most noble part, the copy of the Divine Image in us, and in which we have enough to fill us with admiration of the munificence, power, and wisdom of the Infinite Creator, when we contemplate the noble faculties of the soul, the vast reach and compass of its understanding, the piercing quickness of its thought, its astonishing inventions, its wonderful wisdom and memory, and in a word its divine nature and operations, we are lost in admiration of the Almighty Creator. The mind or spirit, in strict philosophy, is the man; and the body is no more than the outward machine superadded thereto; the soul is the seat of life and action, the inward spring and principle, which regulates and directs all the motions of its earthly vehicle: From this noble piece of created intelligence proceeds all that is truly desirable in us; hence originate those philosophic flights which pervade the hidden world, and discover the confines of creation; and from hence results those sentiments of truth, goodness, and virtue, which give dignity to the human nature, and advances it nearer to the Divine Image. The soul then is

a particle of real excellence, being the chief and crowning work of God in this lower world ; and as it is susceptible of enjoying inconceivable happiness, or suffering exquisite misery in a disembodied state, we ought, as rational beings, to take every opportunity to emancipate our attentions from the chains of sublunary concerns, and fix them upon this one grand object of securing substantial happiness in another state ; for we shall soon find, that a few more revolutions of time will carry us down the stream of life, and embark us on an unknown and awful eternity.

The inventive power of the soul, which manifests the particular concern and agency of the infinitely wise Creator, is very astonishing, that man's invention should reach to so great a variety of matters, that it should hit upon every thing that may be of any use either to himself or human society, or that may any ways promote the benefit of this lower part of the creation : What a vast reach must the soul be endued with, to invent those curious sciences of geometry and arithmetic, and those nice and various instruments made use of by the geometrician, astronomer, geographer, and sailor ? And what a wonderful sagacity is shewn in the invention of opticks, the telescope, the microscope, and other glasses, wherewith are discovered the wonderful works of the Great Creator in heaven and on earth. And as for this lower world, what material is there to be found ; of all the excellent variety with which the Creator hath furnished

ed the world; what, I say, that man's contrivance doth not extend to, and make some way or other advantageous to himself, and useful to mankind, for various purposes?

The active soul, by which man lives and moves,
By her high faculties her lineage proves;
Her faculties so variously bestow'd,
Display the source Divine, from which they flow'd;
And of his creatures rational require,
A hymn of praise to their all-gracious Sire.

————— and must this span,
This dream of life, comprise the whole of man?
For better ends th' Almighty, wise and good,
With such high faculties the soul endu'd:
But will the wise Creator throw away
Such talents on the creature of a day?
A creature which to virtue's heights can soar,
And drinking deep of knowledge, thirst for more:
Shall he cut off from Life, no more to bloom,
For e'er to sleep, forgotten in the tomb?

If we consider the union of the soul and body, of these two so different substances, thought will be lost in the reflection, while admiration is incessantly employed upon the fact: The body was formed of the dust, where shines forth the great art, power, and wisdom of our Creator, and thereby to teach us that we are dust, and shall return unto the dust.

The Creator also intended thereby to put a bridle upon our pride, to repress our contempt of others, to engrave upon our memory our frailty and our mortality, and in short to lead us to direct every action of this body to the glory of him who formed it; and that so much the rather,

ther, as this body constructed with so much art, this so wonderful assemblage of fluid and solid parts, must one day return to the dust. Our body is an amazing curious machine, the infinite art whereof secretes many parts thereof from the most piercing observations of the most able anatomists. How few who examine closely the skin (that common but surprising tegument or covering which serves to inwrap the skin) there to observe, that according to the exigency of the acting parts, it is thicker in some places than in others, as in the palms of the hands, and upon the soles of the feet, while elsewhere it is more tender and delicate : How few who consider the pores of this skin, which are so small, that one single grain of sand will cover many of them : How few persons, in short, reflect upon the infinite art of the muscles, or on the manner in which these machines are annexed to the solid parts, as a kind of animated levers, or raise their ideas towards the Inventor and Author of these levers, towards Him who hath arranged the muscles, and disposed their little fibres and vesicles in such a manner, that all the parts act and perform their functions without hindering each other : Surely we must have lost our senses, not to acknowledge and adore God as the Architect and Author of our whole machine, who hath not only fabricated this wonderful composition, but still moves it himself every moment ; who forms, as Job says, the assemblage of the bones, that wonderful assemblage which the wisest of kings places in the
number

body

number of the most hidden secrets of nature. Let us now consider, that this wonderful machine of the human frame is supported upon moveable flexible pillars, upon diverse bones, each of which is exactly of the construction necessary to its use; that the basis of these pillars are not only compounded of one single bone, but of several joined together by the skin and sinews; that the foot taken entire, and compounded of many bones, is so well constructed, that the body supporting itself thereupon, can move itself every way, stand, walk, run, leap, without losing its equilibrium. Consider we the sides formed like a bow, fastened at one end to the vertebræ of the back, and at the other to the breast bone, and which as a shield defend the heart and lungs, serving also to respiration, in conjunction with the muscles, which are placed betwixt them and those that cover them: The back bone, which forms a pillar composed of many bones, and diminishes according to the rules of architecture, so that the body standing up is firm, and yet can bend itself, which would be impossible if the whole spine was but a single bone: The cranium or scull, which as an helmet covers and defends the brain, a very soft matter, and the precious seat of the soul; not to speak of the teeth, their shape and insertion, nor of the mobility of the lower jaw, or the admirable structure of the little bones of the ear; here, if I were inclined to enlarge, I might run over a great part of anatomy, but my limits do not allow me to enter into this detail. God ha-
ving

ving created this admirable machine the body, in order to finish his work joined thereto the spirit; that is to say, a reasonable soul: "And the Lord God formed man of the dust of the earth, and breathed into his nostrils the breath of life, and man became a living soul."

These two beings, so different in their nature, and whose union for that very reason is above all natural powers and all human conception, constitute man, whose life consists in the mutual commerce of body and soul, and in such a disposition both in the fluid and solid parts, that all and every of these members, as so many wheels in a clock, may perform their functions, and that the soul and body can act upon each other reciprocally.—Here let us stop a moment, that we may not lose the opportunity of celebrating the Creator's praise. Tell me, then, from whence comes it, that every impression, and all the motions of the body, pass at the same instant into the soul; did chance then produce an œconomy so marvellous, so full of harmony?

See how supremely eminent the head,
That orb of beauty, and the seat of thought;
Thought, great prerogative of man o'er brute,
Turns on its osseous pole, with graceful ease,
Envelope of the brain, from whose soft frame
The feeling nerves and ev'ry sense take rise.
Hence in serpentine mazes wonderful,
The arterial vessels, branches infinite,
And small above expression, take their course,
Creep from the brain, and ramifie each part.

I shall also mention one thing which I cannot easily pass by, because it plainly shews the especial concurrence and design of the infinitely Wise Creator, and necessarily tends to the management and good order of the affairs of mankind, which is the various dispositions and inclinations of men's minds to this, and that, and the other business. Now all this is an admirable, wise, as well as most necessary provision for the easy and sure transacting of the world's affairs, to answer every end and occasion of man, and all without any great trouble or inconvenience to man, rather as a pleasure and recreation to him; for so far is it from being a labour or fatigue, that the greatest cares and dangers become agreeable to him who is pursuing his genius; and whose ardour of inclination incites him, and bears him up under every obstacle, and carrieth him at last through every opposition to the completion of his designs.

Adventurous mariner, he spreads his sails,
And trusts his bark to the capricious gales;
By them o'er all the depths of ocean hurl'd,
He draws a trackless circle round the world.
Dauntless he lands where'er his vessel's blown,
Nor fears night's perils on a coast unknown;
But by the needle guided o'er the waves,
All the rough sea's tempestuous broils he braves;
For gold th' Atlantic ocean's rage he stems,
Crosses rich India's gulphs for precious gems;
Dreads not for gain his puny frame t' expose
To southern calentures and northern snows.
Curious he steers by unexperienc'd ways,
And seeks new countries, promontories, bays.

While

While with his plummet dragg'd along the ground,
 The various depth he careful strives to found.
 Thus in his skill 'gainst ev'ry chance confides,
 And mocks the angry toffing of the tides.

How great is the benignity of Providence in giving us such variety of things for our food, so pleasing to the taste, and these too fitted for each season of the year, so that we are every day delighted with the novelty and plenty of them ! And as to grain, how easily is it cultivated, and what a large increase doth it produce ? Wheat is a sufficient instance in this matter, being principally useful to the support of man, is easily propagated and in great plenty, and can bear either extreme of heat or cold ; and the structure of the stem part of corn carries in it the footsteps of eminent Wisdom ; it is proper that it should be somewhat tall, that its spike may be sufficiently elevated above the earth ; but then how difficult to support a vegetable to such a height as five feet, when it is not above the sixth part of an inch in diameter ? Here its Contriver has wonderfully provided that it should be divided into several partitions, that each part should be strengthened by a knot, and that from each knot should proceed a tegument to preserve the division above it : Thus the footsteps of Divine Wisdom may be traced, even in a straw ; nor is any object so minute, but it leads the thinking mind to the adorable Former of all.

Full

Full of subtilty, and fond of nice distinctions, some men assuming the name of philosophers, pretend to delineate the nature, and draw the true picture of man ; but, deluded by the glare of their own false wisdom, and forsaking the only true and living light, they have at once perplexed the subject, bewildered themselves, and seduced many to tread with them the inextricable mazes of scepticism and error.

They pretend that man, though of a very superior rank, is yet but a mere animal ; that his origin, like that of brutes, was rude and uncultivated ; and that necessity or experience alone have given him the superiority which he now claims over his brother brutes, though a thousand arguments arise fully to refute this degrading idea, though the scriptures in particular give us a far different representation of the original, the nature, and the destination of man, formed as he was by the immediate hand, by the counsel and deliberate decree of God, and that for the noblest purposes, to be the sovereign of this lower world, and as it were the mouth of all creation to proclaim his Maker's praise ; and if we consider the external shape and make of animals, which (at the same time that it is highly demonstrative of accurate design and consummate wisdom) will be found to fall greatly short of the human frame. These unhappy men, in order to reconcile religion with their own bewildered opinion, embrace or forsake the literal sense of the sacred scriptures according

according as it suits with their notions, or is repugnant to them: They pretend that the Hebrew traditions are often folded up in allegories, according to the Eastern custom, and pretend to explain them. The sceptic's curiosity of seeing into every thing, explaining every thing, and adjusting it to his own weak ideas, is the most dangerous disease of the human mind. The most sublime act of our feeble reason, is to keep itself silent before our Great Creator, to submit and leave to God the care of justifying one day the incomprehensible ways of his Providence; our pride and impatience will not suffer us to wait for this unravelling, we would go before the light, and, by so doing, we lose the use of it; therefore, as you value yourselves, leave all these subtle speculations to the inventors of them and their followers:

No part of the human frame more abundantly testifies the wisdom of the Great Creator, The
EYE. (for none is formed with more excellence, elegance, and art) than the Eye, the inlet of innumerable pleasures, and the means of administering the most valuable advantages; and it must needs appear incredible to every one, that such a number of particulars and circumstances, as are requisite in so great a matter as that of the sight, should have concurred and met each other in so small a compass as the space that contains the eye; nothing can be more manifestly an act of contrivance and design than the muscles of the eye, admirably adapted to move it any and every

every where, upwards, downwards, to this side or that, or howsoever we please, or there is occasion for; and indeed we cannot but stand amazed, when we view its astonishing fabrick, and consider the prodigious exactness, and the exquisite skill employed in every part ministering to this noble and necessary sense, and what admirable provision the Almighty Creator hath made for the guard and security of this so well-formed organ; the whole lodged in a strong well-made socket, and the eye itself guarded with a nice-made cover, the eye-lids. The eye is so tender, that a slight accident, scarcely perceived by some other parts of the body, would be very injurious to its delicate frame; it is guarded therefore with peculiar care, with a care proportioned to its nice texture; it is entrenched deep in the head, and barricaded on every side with a strong fortification of bones; it is further protected by two curtains, hung on a most slender cartilaginous rod, which secure it from every troublesome annoyance. In sleep, when there is no exercise for the eye, but an absolute necessity to guard it, the curtains spontaneously close and lie shut, and the brows are a kind of natural pent-house, thatched and arched with curious wreaths of hair, intended to divert the sweat from trickling into the eyes; the hairs which arise upon the extremities of the eye-lash grow only to a certain convenient length, and never need cutting; they are not flaccid and pendulous like those of the head, but stiff and elastic like bristles; the first would have been
troublesome,

troublesome, the last are beneficial; add to this that their points stand out of the way, those of the upper eye-lid being bent upwards, and those of the lower downwards. This organ is so wonderfully contrived by the Divine Artist, that we can now look about us, discern, and shun the dangers which would destroy us, and view those glorious objects which fill the heavens and the earth; those admirable works of God which every where surround us, and which would be as nothing to us without being seen, do, by means of this noble sense, present their glories to us, and fill us with admiration and pleasure. How prodigiously wonderful, that an image of the highest mountains, and a transcript of the most diversified landscapes, shall enter the small circlet of the pupil! How surprisingly artful, that the rays of light, like an inimitable pencil, should paint on the optic nerves, in an instant of time, in their truest colours and exactest lineaments, every species of external objects!

The Ear: Concerning the wonderful fabrick of this organ, it is situated (as was said before of the eye) in the most convenient part of the head, near the common sensory in the brain, to give the more speedy information in a part where it can be best guarded, and where it gives the least annoyance and hindrance to the exercise of any other parts of the body; in the most lofty, eminent part, where it can perceive the most, and receive the greatest information; and in a part near the eye, with whom it hath a peculiar and

The
EAR.

admirable communication by its nerves. If we survey its fabrick and parts, it will appear to be a most admirable piece of the Divine Wisdom, Art, and Power; for the manifestation of which let us consider the outward and inward parts of this curious organ. If we observe the structure of the outward ear, in all kinds of animals, it must be acknowledged to be admirably artificial, it being so nicely prepared and adjusted to the peculiar occasions of each respective animal: In man it is of a form proper for the erect posture of his body; and here the first thing that offereth itself to our view is the part called the helix, with its tortuous cavities made to stop and collect the sonorous undulations, to give them a gentle circulation and refraction, and so convey them to the concha, or larger and more capacious round cell at the entrance of the ear, and to bridle, as it were, the evagation of the sound when arrived so far, but withal not to make a confusion thereof by any disagreeable representations. Another wise provision of the Creator is in the substance of the outward ear, which is cartilaginous, the fittest for this place; for if it had been bone, it would have been troublesome, and might by many accidents have been broken off; if flesh, it would have been subject to contusion; but being hard, and curiously smooth and tortuous, sounds find an easy passage, with a regular volution and refraction as in a well-built arched grotto, or musical instrument, which magnify and meliorate sounds. Secondly, as to the inward part of this admirable organ,

organ, here we find the most curious and artful provision for every emergency and occasion; the auditory passage, in the first place, is curiously tunnelled, and artfully turned to give sounds an easy passage, as well as a gentle circulation and refraction, but withal so as to prevent their too furious rushing in and assaulting the more tender parts within; and as it is necessary that this passage should be always open to be upon the watch, therefore to prevent the invasion of noxious insects, (who are apt to make their retreat in every little hole) nature hath secured this passage with a bitter nauseous excrement from the glands appointed for that purpose. The judgement of the ear is not less accurate in relation to sounds, whether vocal or instrumental; it distinguishes the time, the notes, the pauses, the variety of tones, treble or base, mellow or shrill, flat or sharp, tender or harsh; which distinctions are made by no other creature but man.

The ear remains always open, for we have occasion for it while we are sleeping; and even then, if it is assailed by any loud noise, it immediately wakes us.

The sense of Smelling. This, (although sufficiently astonishing) by the provision made by the Omniscient Creator, for the reception of smells by the nostrils, which hath several curious muscles, to lift up, and open and shut the nostrils, and so adjust it to every occasion of this sense. It was proper for the nostrils to be in

SMELL-
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The ſenſe of Smelling. This, (although ſufficiently aſtoniſhing) by the proviſion made by the Omniſcient Creator, for the reception of ſmells by the noſtrils, which hath ſeveral curious muſcles, to liſt up, and open and ſhut the noſtrils, and ſo adjust it to every occaſion of this ſenſe. It was proper for the noſtrils to be in

SMELL-
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the same situation, because smells also ascend; and it was fit they should be near the mouth, because they greatly help us to judge of what we eat and drink.

TASTE. In the Taste, as in the smell, we have an astonishing apparatus, abundantly sufficient to the sense, nerves curiously divided about the tongue and mouth, to receive the impressions of every gusto: Its situation is in the most convenient place imaginable for the discharge of its office; at the first entrance, in the way to the grand receptacle of our food and nourishment, to survey what is to be admitted therein, to judge between what is wholesome and fit for nourishment, and what is unsavory and pernicious, and for this end the All-wise Creator seems to have established a great consent between the eye, the nose, and the tongue, by ordering the branches of the same nerves to each of those three parts, by which means there is all the guard that can be against pernicious food, as before it is taken into the stomach it is to undergo the trial of three of the senses; the scrutiny of the eye, the strict surveyor of its outward appearance; and the probation of the smell and taste, the two proper judges of its natural constitution and composition.

FEELING. Of the sense of Feeling two things are proper to be taken notice of, one its organs and nerves; for as all sensation is performed by the nerves, so is this sense performed by nerves likewise,
spread

spread in the most incomparable curious manner throughout the whole body; but to describe their origin in the brain and spinal marrow, their ramifications to all the parts, their inosculations with one another, and other matters, whereby not only the sense of feeling is performed, but also animal motion, and admirable consent and harmony of all the parts of the body is effected, would be too tedious.

The other thing to be taken notice of is the dispersion of this sense throughout the body, both without and within; the other senses, I have observed, are seated in the very best places for the relief and comfort, the guard and benefit of the animal: And forasmuch as it is necessary to the well-being of the body, that every part should be sensible of things safe or things prejudicial to itself, therefore it is an admirable contrivance of the Great Creator to disperse this sense of feeling throughout every part, to distinguish between pleasure and pain, things salutary and things hurtful to the body: Thus, in the five senses, the Power, Wisdom, and Indulgence of the Almighty Creator are manifestly demonstrated; for whether we consider the mechanism of the organs, or the great use and convenience of each sense, we find it noble and grand, curious and artificial, and every way worthy of its Infinite Maker, and beyond the wit and power of any thing but a God, and therefore we must even deny our senses by denying them to be the Almighty's work.

What

What a wonderful mechanism nature has employed in forming the Voice, which can scarce be credited by those who have not considered it attentively; for, first, a pipe runs from the lungs to the lower part of the mouth, through which the voice, (whose principle is the mind) is transmitted; then in the mouth is placed the tongue, encompassed with the teeth; this models and softens the voice, too harsh and strong before, by the striking it against the teeth and other parts of the mouth, it renders the voice distinct and articulate; the Stoics therefore compare the tongue to the bow of a harp, the teeth to the strings, the nostrils to the horn or shell, which echoes when the strings are touched.

RESPI- Next let us pass to another thing, in common
RATION. to all the sensitive creatures, which is Respiration: Of all the acts of animal life this is one of the chief and most necessary, for whatsoever hath animal life hath also the faculty of respiration, or somewhat equivalent thereto; and indeed so congenial is this with life, that breath and life are, in scripture phrase and common speech, taken as synonymous things, or at least necessary concomitants. Moses expresseth animal life by the breath of life.

The exquisite mechanism of the part called the Larynx, its variety of muscles, its cartilages, all so exquisitely made for the purpose of respiration, and forming the voice, are very admirable; and so is the tongue, which ministers
to

to that and many other uses : Next, the fabrick of the part called the Trachea deserves especial remark ; its valve, called the epiglottis, on the top, to fence against all annoyances ; its cartilaginous rings nearly environing it, with its membranous part next the gullet, to give the freer passage to the descent of the food ; and lastly, its inner tegument, of exquisite sense, to be readily effected with, and to make efforts against every thing that is hurtful or offensive ; these do all justly deserve our admiration : And no less amazing are the parts farther within the bronchi. Here I might launch out into an ample description of all the other parts ministering to this necessary act, and shew the wonderful contrivance and artificial structure of them ; but a detail of these curious parts must be omitted for the reasons before given,

From hence I might also proceed to the commodious form of the ribs, the curious mechanism of the intercostal muscles, ministering both to the ordinary and extraordinary offices of respiration ; but, passing them by, I shall observe an astonishing contrivance of our Almighty Creator, and that is the circulation of the blood in the foetus in its mother's womb, so unlike the method thereof after it is brought into the world. In the womb, whilst it is as one body with the mother, and respiration is unnecessary, there are two ducts or canals on purpose for the passing of the blood, without going through the lungs ; but as soon as the child is born, and become a
distinct

distinct being, and able to breathe, then these two passages become unnecessary, one being nearly effaced, the other becoming a ligament. And now tell me, ye Freethinkers, what action is there that doth more plainly shew Design, Reason, and Contrivance?

Sure a man must have a strange cast of understanding, who does not discover the finger of God in so wonderful a work; the duplicates, in those parts of the body, without which a man might have subsisted, though not so well as with them, are plain demonstrations of an All-wise Contriver; as those more numerous copyings, which are found among the vessels of the same body, are evident demonstrations that they could not be the work of chance.

ALI-
MENT. There is one thing, in this astonishing frame of man, which I cannot pass by, and that is, the wonderful contrivance of the Great Creator, in the mechanism of nature, in converting our aliment into animal substances; first, by mixing with it in the stomach, juices already prepared; secondly, by the action of the solid parts, as it were churning them together; this is evident from the vast quantity of saliva or spittle mixed with our food in chewing; afterwards the same aliment, mixed with the liquor of the stomach and other juices, is converted into chyle, which passes through various ducts and canals, and mixes with the blood, and circulates with it through the lungs, and is brought

brought back into the left ventricle of the heart, and is forced again by the heart into the aorta, (being the great artery, which proceeds from the left ventricle of the heart, and carries the blood through the body) and there passed by two contrary forces, that of the heart driving it forward, against the sides of the tube, and the elastic force of the air, pressing it on the opposite side, thereby forcing it through the whole arterial system; the arteries are elastic tubes, endued with a contractile force, by which they squeeze and force the blood still forward, it being hindered (by the contrivance of the Almighty Creator) from going backward by the valves of the heart, which open to receive the blood, and shut to prevent its regress: By this motion the blood and chyle are more intimately mixed, and, by attrition or friction, attenuated, by which the mixture acquires a greater degree of fluidity and similarity; the aliment, as it circulates through an animal body, is reduced almost to an imperceptible tenuity, before it can serve the animal purposes; ten capillary arteries (according to the account of anatomists) in some parts of the body, as in the brain, are not equal to one hair, and the smallest lymphatick vessels are smaller than the smallest capillary artery: What astonishing mechanism is that which can attenuate a fluid, compounded of human aliment, so as to make it flow freely through such tubes? The fluids and solids, of an animal body, demand a constant reparation, or supply of food, the whole body being nothing but a system of
such

such canals, which all communicate with one another mediately, or immediately ; and now, what can more plainly shew the contrivance and design of the Great God of Nature ; what is thought and contrivance if this be not ?

We may consider the body as a system of tubes and glands, fitted to one another after such a wonderful manner, as to make a proper engine for the soul to work with ; this description does not only comprehend the bowels, bones, tendons, veins, nerves, and arteries, but every muscle, and every ligature, which is a composition of fibres, that are so many imperceptible tubes, or pipes, interwoven on all sides with invisible glands, or strainers. This general idea of a human body, lets us see how necessary labour is for the right preservation of it ; there must be frequent motions and agitations to mix, digest, and separate the juices contained in it, as well as to clear and cleanse that infinitude of pipes and strainers of which it is composed, and to give their solid parts a more firm and lasting tone ; labour or exercise ferments the humours, casts them into their proper channels, throws off redundancies, and helps nature in those secret distributions, without which the body cannot subsist in its vigour, nor the soul act with cheerfulness.

I might here mention the effects which this has upon all the faculties of the mind, by keeping the understanding clear, the imagination

tion untroubled, and refining those spirits that are necessary for the proper exertion of our intellectual faculties, during the present laws of union between the soul and body: Had not exercise been absolutely necessary for our well-being, our Creator would not have made the body so proper for it, by giving such an activity to the limbs, and such a pliancy to every part, as necessarily produce those compressions, extensions, and all other kinds of motion that are necessary for the preservation of such a system of tubes and glands, as has been before mentioned; so that the Royal Psalmist had great cause to say, "I will praise thee, for I am fearfully and wonderfully made; marvellous are thy works, and that my soul knoweth right well."

Man, endowed with reason, and designed to cultivate the liberal arts, formed for society, and capable of a thousand refined and intellectual pleasures, required in his form a capability of procuring for himself those satisfactions, so agreeable to his nature, and so different from what animals feel or enjoy; accordingly we find a striking difference in the external make of man, and exactly such a combination of parts as we should expect in such a creature.—We allow that several animals may exceed him, in the quickness of their sight, in the strength of their limbs, the agility of their motion, and several other particulars, essentially necessary to their state and being; but the Great Creator has

has given to man one member, which makes amends for all these, which supplies every defect, and is the source of innumerable accommodations, elegancies, and arts ; I mean the Hand: How commodious are the hands which nature has given mankind, and to how many arts do they minister ! our fingers are shut and opened with the utmost ease, so flexible are the joints ; the hand therefore is ready, by the help of the finger, to paint, to carve, to engrave, to strike the harp, &c. to tune the flute ; those for pleasure : With regard to necessaries, it tills the field, builds houses, weaves or spins habits to cloath us, and works all the various instruments, in copper or iron ; it is the province of the senses to perceive, the mind to judge and invent, and the hand to execute ; thus, you see, it is owing to the hands of artificers that we are protected from the inclemency of the weather ; that we are cloathed and can live securely ; that we have cities, walls, houses, and temples.

By the labour of the hand, we have plenty and variety of food, for many of those fruits which are immediately spent, or ought to be kept, would not arise without culture.

Iron, so necessary in the tillage of land, is forced from the bowels of the earth by our hands ; we have discovered the veins of gold, silver and copper, so deeply buried, and mould
and

and fashion them, in various forms, for our use and ornament.

We fell trees for firing to warm ourselves and to dress our food ; by these we are supplied with timber to rear our houses, which defend us from the extremes of heat and cold ; by these we build our ships, in which we traverse the ocean, and import the produce of different countries ; we, by our skill in navigation, rule and direct those things which are naturally most violent, as the winds and the waves, and from the sea we derive various advantages : But as to the land, we are absolute masters of what that produces ; we enjoy the vallies and the mountains ; the lakes and the rivers are ours ; we sow the corn and plant the trees ; we give plenty to the meadows, by watering them with gentle streams ; we turn the course of rivers, and bid them flow in different channels ; in a word, we, by our industry and the toil of our hands, give a new gloss and lustre to the face of nature.

The figure, shape, and size of man's body, is the most commodious that possibly could be invented, the most agreeable to his motions, to his labours, and all his occasions ; but in so large a prospect, it would be endless to proceed upon particulars. As I have before taken notice of many of the organs and parts of this most astonishing frame, it must therefore suffice to take notice in general only, how artificially
every

every part of our body is made, every thing ministering in the best and most compendious manner to their several places and uses. But I cannot omit taking notice of the Divine management and appointment, in the great variety throughout the world, of men's faces, voices, and hand-writing, and what confusion, disturbance, and mischiefs are prevented thereby, by the infinitely Wise Creator and Ruler of the universe, as every man's face can distinguish him in the light, his voice in the dark, and his hand-writing can speak for him though absent.

Those who were skilful in anatomy among the antients, concluded from the outward and inward make of the human body, that it was the work of a Being transcendantly Wise and Powerful: As the world grew enlightened in this art, their discoveries gave them fresh opportunities of admiring the conduct of Providence in the formation of an human body. Galen was converted by his dissections, and could not but own a Supreme Being, upon a survey of this his handy-work. There were indeed many parts, of which the old anatomists did not know the certain use; but as they saw that most of those which they examined were adapted with admirable art to their several functions, they did not question but those, whose use they could not determine, were contrived with the same Wisdom for respective ends and purposes: Since the circulation of the blood has been found out, and many other great discoveries made by our

modern

modern anatomists, we see new wonders in the human frame, and discern several important uses for those parts, which uses the antients knew nothing of; in short, the body of man is such a subject as stands the utmost test of examination; though it appears formed with the nicest wisdom, upon the most superficial survey of it, it still mends upon the search, and produces our surprise and amazement in proportion as we pry into it.

Having before taken a survey of this wonderful fabrick of man, let us next consider the following comment on Ecclesiastes, chap. xii. The royal preacher, in the first seven verses of this chapter, enforces the duty of early religion, by arguments principally drawn from the decay of the intellectual and corporeal powers of advanced age: The evils brought on the mental system are little more than cursorily spoken of, the inconveniences resulting to the bodily structure, from a long series of years, are more particularly expatiated upon; whence it is evident, that Solomon chiefly designed the reader's conviction to arise from an anatomical survey of the human fabrick; but the description in that chapter exhibited of the various organs of the body, is somewhat obscured by an allegorical phraseology, in order to explain the meaning of the words, and the connection of the author's sentiments: Let us view them in the form of an essay; ver. 1, In the earliest part of thy life, meditate frequently upon thy Great Creator; and remember likewise, that

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thou art not indebted to him only for thy existence, but for thy continued preservation, and for the repeated comforts vouchsafed unto thee daily; therefore endeavour to testify thy gratitude for such high obligations, by consecrating the bloom of thy youth to Almighty God thy Creator: Do not postpone the discharge of religious duties to more advanced years, because infirmities, pains, and sorrows, will then imbitter thy days. Ver. 2, Consider that not only the body is enervated by age, but that the intellectual faculties, those luminaries of the microcosm, are likewise impaired; the understanding is darkened, the memory debilitated, and the will become cold, languid, and enfeebled, or perverse and reluctant to the exercises of religion: The judgment is the light of man; it is that which irradiates, guides, and directs his steps; if this sun of the mental world is obscured by old age, how great is our darkness! and how incapable are we hereby rendered of all religious pursuits! Let me also add, that besides those natural obstacles arising from deficient powers of body and mind, there are very many contingent impediments to our duty; I mean those outward troubles and afflictions which accompany human life, and which are usually multiplied in proportion to the number of years which a man sojourns upon earth. Ver. 3, But as the early surrender of our hearts to God, and the steady application of our minds to his service, are matters of such vast consequence, it may not be amiss to examine with greater precision

cision those particular lets and hindrances to our duty, which are the defects of age. Those hands, which should be frequently lifted up in prayer to God, being weakened by age, hang down and tremble; they are disabled from earning provision for the body, or defending it from external injuries; at the same time the ribs, and the stronger bones of the thighs and legs, which formerly furnished strength, rectitude, and stability to the whole fabrick, which likewise, in conjunction with the back bone, connected and held together the several parts of the edifice, these strong and mighty supports are all relaxed and bowed down by age, and foretel the approaching fall of the superstructure. Ver. 4, The teeth also in advanced life become incapable of discharging their office, by a decay of their substance or loss of their number; hence the aliment is not properly broken and divided, and prepared for the stomach, because since our very being depends upon the sustenance we receive, and its due distribution through all the parts of the body, we can easily infer, that the entire loss or destruction of our teeth must cause a great failure of strength and vigour to the whole system. Another melancholy effect of old age is a deficiency of sleep, whereby the strength and spirits are further impaired, the old man frequently awakes at the crowing of the cock, and is incapable of renewing his slumbers: The organs of hearing are likewise great sufferers by age; those daughters of music, who, by their exquisite delicacy of sensation, and

skill in melodious principles, formerly reduced sounds into harmony for the entertainment of themselves and others, are now brought into the lowest estate, and are no longer in a capacity of answering the ordinary purposes of their structure. Ver. 5, And whereas youth is bold, valiant, and regardless of danger, age is quite the reverse of this character; the antient man discovers, in every action, diffidence, irresolution, and timidity: Thus fears and terrors are attendants upon the steps of that man, whose grey hairs resemble the white blossoms of the almond-tree, and to whom, from the decline of his strength, even the grasshopper, that light and inconsiderable insect, becomes a burthen.

From what hath been already said upon the weakness, infirmities, and distempers of advanced life, the expediency as well as duty of early religion must abundantly appear plain: However, as the human body (as hath been before shewn) is a complicated structure, and as little more than the external parts of the building have at present been considered, let us carry our researches further, and examine what is doing in the more private and retired chambers of this wonderful fabrick.

Ver. 6, Here we shall be astonished at the stupendous displays of Almighty Wisdom, Power, and Goodness: Know then, that there are in the human body a multitude of white cords, to which anatomists have given the appellation of
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nerves ; these strings are the instruments of sensation and motion. From the brain, which is the source of the whole nervous system, there proceeds through the entire length of the back bone, (in a cavity curiously formed for its reception and security) a cord of an enlarged size, which, on account of its resplendent whiteness, may aptly be compared to the complexion of burnished silver ; from this cord are branched out many pairs of smaller strings, which are distributed along the arms, thighs, legs, and trunk of the body. Now, in old age, this silver cord is very liable to be relaxed and weakened, or a part thereof to be altogether broken in its functions, as appears manifest from those paralytic complaints to which elderly persons are peculiarly obnoxious : When the canals which compose this cord are quite obstructed, then follow compleat palsies, or, in other words, an entire deprivation of sense and motion. Ought we not therefore to remember our Creator in the prior stages of life, before this melancholy period of deficient sensation and action arrives ? What an amazing organ is the brain, that source and parent of all sensation and motion ! that inexplicable repository of the understanding of man ! how curious the texture ! how tender its substance ! and of what vast importance to the existence, utility, and comfort of the species ! for which reason the All-wise Creator hath securely lodged it in a strong citadel of bone, which, from its circular cavity, and the inestimable value of its treasure, may with propriety be stiled the golden bowl.

But it is observable that, in extremity of old age, this golden bowl, and more especially several parts of the brain, are highly injured, and through length of time become unfit for their various offices: It is like an exquisitely wrought machine with complicated movements; a long succession of years breaks, wears out, and dissolves this surprising workmanship; wherefore it must be egregious folly to defer the consideration of our eternal interest till the winter of life comes upon us, when we are disqualified for the common intercourses of society, and even for the ordinary actions of animal life. But additional motives for early religion will result from a scrutiny into the effects of age upon the heart, and the great vessels which proceed from this fountain of life; we most assuredly ought to secure the favour of our Maker, before these large canals which issue from the heart, and receive (like pitchers at a well) the contents of this spring, be grown incapable of discharging their office aright; for it is an incontestible truth, that in elderly men these grand conduits, which take the blood from the heart, in order to circulate it through the lungs, the brain, and all the organs and members of the body, become bony, rigid, and inflexible, whereby they are disabled from acting upon the blood, and driving it through all the distant pipes of the system: Hence those languors, faintings, and sudden changes, which frequently occur in persons much advanced in years, but also the heart itself, (that cistern of the whole building) which receives

receives and dispenses to the furthest extremities, in an appropriated period of time, every particle of blood belonging to the body : I say this powerful reservoir is rendered by old age unfit for its important charge, part of its substance, like the great canals already mentioned, degenerate into bony fibres, which are unable to perform their due action, for the heart propels the blood to the extreme parts by a contractile force ; if this contractile power is abated by the hardness and inflexibility of the heart's substance, it is apparent that the circulation of the blood cannot properly be carried on, but momentary stagnations, sinkings of spirits, and universal weakness must follow, because this power of contraction, like the wheel of a water engine, is the grand and principal cause of the distribution of the fluids through all the numerous channels of the system.

This is a true though uncomfortable representation of the animal œconomy in the decline of life ; whoever therefore attentively surveys this picture, ought to act answerably to the admonitions it suggests. He should acquaint himself with God from his youth, and secure the friendship of that Almighty Being who will not forsake him in his old age, and when he is grey-headed ; every serious and thinking man must be convinced, that the dedication of the prime of his days, and the vigour of his strength to heaven, is both wisdom and piety ; for what can all his services avail him under the corporeal

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real imbecilities, mental failures, and the many incidental evils of extreme age. Ver. 7, But it must be also noticed, that these defects and decays of the system are the immediate forerunners of its dissolution; that when this great change befalls us, the materials of which our bodies are composed shall be all resolved into earth from whence they were taken; and our souls, which animated these organized particles of dust, shall return to God the Father and Judge of our spirits, who will reward or punish us according to our deeds in the flesh. This is an argument of infinite weight, and indeed far superior to any arguments hitherto urged for the remembering our Creator in the days of our youth.

One generation passeth away, and another cometh so equally in its room to balance the stock of the terraqueous globe in all ages and places, and among all creatures: This Providence of God is remarkable in every species of living creatures, but that especial management of the recruits and decays of mankind, so equally all the world over, deserves especial observation. In the beginning of the world, the longevity of men was of absolute necessity to the more speedy peopling of the new world; and the same Providence appears, when the world was then pretty well peopled, by reducing the common age of man then to one hundred and twenty years; and when the world was fully peopled after the flood, the lessening the common age of man

man to seventy or eighty years, is manifestly an appointment of the same infinite Lord that ruleth the world.

It appears from our best accounts of these matters, that in Europe, and probably throughout the world, there is a certain rate and proportion in the propagation of mankind; such a number marry, so many are born, such a number die, in proportion to the number of persons in every nation, county, or parish; and as to births two things are very considerable, one is the proportion of males and females, not an uncertain accidental number, but nearly equal; another thing is, that a few more are born than appear to die in any certain place, which is an admirable provision for the extraordinary emergencies and occasions of the world, to make up the ravages and depredations of diseases, of war, and the seas. And now upon the whole matter, what is this but admirable and astonishing management, the work of one that ruleth the world? And that at this distance from the flood, of upwards of four thousand years, the world should not be over-stocked, can never be made out without allowing an Infinite Providence.

How various are thy works! is an observation which arises from every survey of the animal world; and the more it is pursued, the mind must be filled with higher ideas of His Superlative Wisdom, who planed the mighty scheme
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of creation, and designed, in his comprehensive thought, such an infinite, beautiful, and useful variety, as to enumerate and superficially contemplate, is sufficient to employ the whole of our lives! Various are thy works, in wisdom hast thou made them all! the earth is full of thy goodness; what then must be that Heaven wherein dwelleth perfect Righteousness!

There is a peculiar pleasure in contemplating the animal world, where the source of inquiry is almost inexhaustible, and the means of improvement are various, great, and delightful; they bespeak much design; they shew the amazingly strong power of what we call instinct, that wonderful something, given by the Deity, to the animal Creation, in the place of our reason. It is impossible to survey with the most curious eye, the immense number, and striking variety of the animal creation, without a great idea of the Creator's Wisdom and Power; but the more closely we investigate the individuals of this creation, the more accurately we consider their several parts and powers, and the more carefully we compare them with those of our own species, the more profound will be our admiration of God, and the higher gratitude shall we certainly entertain for the distinguished place we bear in these his sublunary dominions. As this family of animals is very large and extensive, I shall therefore describe some of the most remarkable of them, and give only such hints
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and touches upon the rest, as may serve for samples of what might be further observed.

When we extend our view through creation, and consider the infinite variety which the wisdom of God hath produced, we stand astonished at the exuberance of design, and cannot fail to entertain the highest ideas of so Great and Glorious a Being! Any one order of creatures, of beasts, of birds, of fishes, nay, or of vegetables, is sufficient to engross our whole attention, so extensive and so manifold are they, that our speculations can never be wearied; and surely they never should be wearied, in contemplating his works who is the first Author of wisdom and beauty.

The Zebra, a native of Africa, and remarkable for its swiftness, is one of the most beautiful singularities in the animal world; is about the size of a mule, or middle-sized saddle-horse; its general shape is that of a well-made horse; the head is shaped like a horse's, except that the ears are longer; the mane is short, not hanging down, but erect; the tail is rather like an ass's than an horse's, with short hair, except that at the end it has a tuft of long hair; it is hoofed like a fine race-horse, and beautifully striped all over with broad stripes of dusky brown, with narrow white stripes between them; in some parts the stripes are white and brown alternately, in an irregular and broken manner, yet very beautiful; the male and female are both equally beautiful;

beautiful; the Africans take great pains in taming the Zebra, as it is then much valued; but the difficulty attending it renders them so very scarce, that few of the Princes of that quarter of the world, where this animal is a native, can procure one. These creatures are inoffensive and feed on grass, a hundred of them are sometimes seen feeding together, which must afford a most agreeable sight; it is said that, while the flock of them feeds, some are upon the watch, and give signals when they dread any danger, in a note very similar to the braying of the common ass; the moment the signal is given they take their flight, swift as so many stags together: It is not uncommon for the inhabitants to see a flock of them pursued by a leopard or a tyger, like a flock of sheep by a dog, but the pursuer seldom overtakes them. No man who contemplates an animal like this, can doubt of the existence of an Original and All-wise Designer; the view of it alone is sufficient to discredit all atheism; while the thinking mind must be filled with admiration, on the reflection of His manifold Wisdom, who has formed such a wonderful variety, and settled such a regular œconomy through nature, that this variety uniformly continues, and will continue to the end of time.

The Elephant: This noble animal is found in different parts of Asia and Africa; it is the largest of all the quadrupeds, and is of different sizes in the various kingdoms it inhabits: In
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the East-Indies they are twelve and often fourteen feet in height, those in the gold and ivory coast are not quite so large; it is, by many commentators, thought to be the Behemoth mentioned in Job; the skin of some is black, very thick, and without hairs; of others it is of a dusky brown; the ears are large, hanging downwards; they have but small eyes according to their size; the tail is slender and not very long; their legs are like trunks of small trees cut off by the roots, eminently fitted by Providence for supporting their bulky bodies; the proboscis or trunk, which is of a great length, hanging down between their two tusks, and gradually lessening towards the extremity, which is flat, hath two holes, or nostrils, at the flat end; this, it has been observed, the Romans might very properly call a hand, as it can shorten and lengthen it at pleasure; it is of a grisly substance and full of wrinkles, and endowed with so much strength, that the stroke of it would break the bones of a horse or camel, and even kill him outright; and such is the agility wherewith this creature exerts it, that it is frequently found, by means of it, victorious over the Rhinoceros (its avowed enemy, which is so strong that he will toss up a large bull, as was seen in the amphitheatre at Rome) otherwise impregnable against its fiercest attacks.—The elephant can, it is said, even pull up trees by the roots with his trunk, which is so pliable that he conveys all his victuals with it, by means of these two holes, into his mouth; his body is round and
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full, and rises in an arch more remarkable than in any other animal; the teeth are of a great thickness, but the tongue is small; they shed their teeth often, more especially when young; the tusks, which are what we call ivory, are larger in the male than the female, some of them are six or seven feet long, and weigh one hundred and forty pounds, they do not arrive at their full growth till fifty or sixty years; their ordinary food is grass and corn, or twigs and leaves of trees; they live to a great age, commonly two hundred years and upwards. The hunting the elephant is reckoned a noble sport all over Africa, but it is generally performed with a numerous posse, and loud and horrid shouts of the people: The most common and least dangerous way of catching them, is, by driving them into deep holes, made for that purpose, covered with straw and leaves, and when the beast is fallen into it they pierce him all over with their weapons with incredible fury: At a loss of a keeper they have been known to pine away with grief, so susceptible are they of love and affection; it is really wonderful to imagine with what readiness these stupendous creatures learn what is taught them; history affords many instances of their surprising sagacity; his flesh yields a plentiful feast, more than equal to six large oxen; and among the rest of his spoils, the hair of his tail bears a considerable price, for with this the women weave themselves collars, bracelets, girdles, &c. with variety of figures and devices, which denote their quality:

quality : This stupendous creature is of a docility and ingenuity very near approaching to human reason ; its natural love for its young, retentive memory, wonderful gratitude and resentment, with many other qualities of virtue peculiar to it, have excited the admiration of both antients and moderns.

“ How instinct varies in the grov’ling swine,
Compared, half-reas’ning elephant, to thine.”

The Beaver : As nothing is of greater consequence to mankind, in their present state, than industry, we find no less of this capital virtue more frequently or more emphatically taught in the animal world ; the beaver affords us a striking example thereof, as well as a proof of the Divine Wisdom in that amazing sagacity which this wonderful creature discovers : The Beaver is as big in the body as a very large dog, but the legs are short, and the fore feet are shaped like hands, having long and distinct toes, in the nature of fingers, and broad nails like those of an human creature, the hinder feet are webbed like those of a duck, and serve for swimming ; the general colour of the creature is a dark tawny brown, in some places almost approaching to black ; but besides the deep and glossy fur, which is of this colour, it has another short and soft, which immediately covers the body, and is the fur which our manufacturers value so highly ; the teeth of the beaver are yellow, and its tail, which is very large, broad, and flat, is of a black colour and is
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not hairy, but covered with a black skin, which is marked in such a manner, that it has the resemblance of the scales of fishes; the tail is of great service to them in their building, their industry and sagacity in which are astonishing.— The first thing they do, when they are about to build, (in America especially) is to assemble in companies, sometimes of one or two hundred together; then they choose a place where plenty of provisions are to be had, and where all necessities are to be found proper for their use; their houses are always in the water, and when they can find neither lake nor pond, they endeavour to supply that defect by stopping the current of a brook or small river, by means of a dam; to this end they first cut down trees in the following manner, three or four beavers will go to work about a large tree, and by continually gnawing of it with their teeth, they at last throw it down, and so contrive matters that it always falls towards the water, that they may have the less way to carry it when they have divided it into pieces; after they have done this, they take each piece by itself and roll it towards the water, where they intend to place it; these pieces are more or less thick and long, according to the nature and situation of the places where they are required; sometimes they make use of the largest trunks of trees, which they lay down flat; sometimes the dam only consists of branches as thick as one's thigh, which are supported by stakes interwoven with the branches, and all the vacant places are filled up with a
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fort of clay, in such a manner, that no water can pass through them; they prepare the clay with their paws, or hands, and their tails serve instead of a carriage, as well as a trowel to lay on the clay. The foundations of the dams are generally ten or twelve feet thick, and they lessen gradually till they come to two or three: They always observe an exact proportion, inasmuch that the most curious architects are not capable of performing their work more regularly; that side towards the water is always sloping, but the other is perpendicular. The construction of their houses is altogether as wonderful, for they are generally built upon piles, in small lakes, which are formed by making of the dams; sometimes they are upon the bank of a river, or on the extremity of a point of land which advances into the water. They are of a round or oval form, and the top of them is like a dome.

The following description of one of their houses, which was examined and measured, will perhaps give the reader more satisfaction than an account in general: This, of which I am now speaking, was about three parts surrounded with water, and the other part was joined to the land; it was round, with an oval dome at the top, and the height, above the surface of the water, was eight feet: It was about forty feet in diameter, and one hundred and twenty in circumference, which perhaps may seem strange, because the proportion is geometrical; this how-

ever is fact, for it was measured several times : The part that joined to the bank was not made out of it, but was of the same materials with the rest. The bottom of the house was of earth, or soil, with pieces of wood laid in it, above three inches in circumference ; then a parcel of poplar sticks, laid with one end in the house, and another slanting a long way under water ; then a layer of earth again, and then poplar sticks, which were repeated to the height of eighteen inches ; from thence to the top of the house there was a mixture of earth, stones, and sticks, curiously put together ; and the whole was covered with fods, and had long grass growing thereon ; the largest pieces of wood, made use of near the top, were about three inches in diameter, and all the rest was small stuff, not above three fingers thick. The outermost part of this house did not stand farther out of the creek than the edge of the shore, but that which brought the water almost round the house were the trenches, which were made by taking out the earth, these were nine feet in the broadest part, and eighteen feet in length.

The creek at the front of the house was thirty-six feet broad, and seemed to be pretty deep : The house was so contrived as to be very solid, for there was no breaking into it without an ax, and in the frosty season it was quite impenetrable : From this house there were several paths into the wood, through which they drew the sticks

sticks and trees which they made use of for food or building.

The wall of the house was two feet thick, and it was covered with smooth clay on the inside, in such manner, that it would not admit the least breath of air: Two thirds of the structure were out of the water, and in the upper part each beaver had his particular place, whereon leaves were strewed to lie upon. There never was any filth seen in any of these houses, which are made like an oven in the inside, with a passage for these animals to go and bathe in the water. One of these will generally lodge about eight or ten beavers, and sometimes more: These creatures are never surpris'd by the frost and snow, for they finish their work towards the end of September, and then they lay in provisions for the winter: In the summer time they live upon fruits, and the barks and leaves of trees; and they likewise catch small fish, and particularly crabs or cray fish; however, their winter provision is the tender branches of trees, particularly poplar, of which they seem to be very fond. When there are great floods caused by the melting of the snow, which damage the houses of the beavers, they then leave them, and shift for themselves as well as they can, and in the summer return again to repair the damage that has been done by the flood.

When any of their houses are demolished by the hunters, they never repair them again, but

build others quite new. In hunting the beavers the savages sometimes shoot them, always getting on the contrary side of the wind, for they are very shy, quick in hearing, and of a very keen scent: This is generally done when the beavers are out at work, or on shore feeding on poplar bark. If they hear any noise, when at work, they immediately jump into the water, and continue there some time; and when they rise, it is at a distance from the place where they went in: They sometimes are taken with traps; these are nothing but poplar sticks laid in a path near the water, which when the beaver begins to feed upon, they cause a large log of wood to fall upon his neck, which is put in motion by their moving of the sticks, and consequently requires an ingenious contrivance: The savages generally prefer this way of taking them, because it does not damage their skins. In the winter time the savages break the ice in two places, at a distance from the house, the one behind the other; then they take away the broken ice, the better to see where to place their stakes; they fasten their nets to those which have large meshes, and sometimes are eighteen or twenty yards in length: When these are fixed, they proceed to demolish the house, and turn a dog therein, which terrifying the beaver, he immediately leaves it and takes to the water, after which he is soon entangled by the net. If they are taken young they will become very tame, but then they will do a great deal of mischief in the orchards by breaking the trees.

trees. The flesh is looked upon as very delicate food, but the tail is the greatest dainty, and is in great request.

Among all the domestic animals to be found in the Asiatic dominions of the Turks, none deserves our notice more than the Camel, which is a lean, stately, inoffensive animal: They are cloathed with a short soft hair, a little curled, generally of a brownish colour, though some are white: Of this is made the finest cam-blets, and St. Matthew mentions particularly the cloathing of St. John, which was of camel's hair, and a leathern girdle about his loins. Their head is but small, they have large eyes and short ears, with a slit in their upper lip like a hare; they have no teeth in their upper jaw; their neck is long and thin, with a thin short mane; and just under their stomach, between their fore legs, is a hard substance, occasioned by their laying down; they have a bunch on their back, which the prophet Isaiah mentions; it is covered with a shorter hair than the rest of their bodies, though it is more fleshy: They have a short tail like an ass, their legs are long and thin, and at their knees is a small bunch, which seems a supporter to their whole bodies; they have a cloven fleshy foot, which is well adapted to the hot sandy countries, where a hoof would sooner be destroyed: They are said to live to the age of fifty, and sometimes sixty or seventy years; they are wonderfully fitted by Providence for travelling through the hot sandy de-

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ferts, being able to go four or five days without water ; for this reason they are very much used in long journeys taken by merchants, who go in large companies called caravans, to prevent their being plundered by robbers. Camels are taught to lie down to receive their burdens, which is usually eight hundred weight, with which they will travel about two miles and an half in an hour, and their day's journey is generally twelve or fifteen hours ; they will browse on the shrubs they find by the way, or if they meet with nothing of that nature, half a gallon of beans or barley, or a few balls made of meal, which travellers generally carry along with them, will nourish one of them for a whole day. The camel goes a year with young. The Arabs do not kill this creature for food, but the Turks eat the flesh of the young ones, which they reckon a great dainty : Their milk was used by the Egyptians as a remedy for many diseases, with very good success ; this perhaps may be the reason that in Jacob's present to Esau, the thirty milk camels is in particular taken notice of by Moses, Genesis chap. xxxii. ver. 15, as being of greatest value. So far doth God extend his goodness over all his works which he hath made in wisdom, that he hath appointed each creature for its proper climate ; whereas some can endure heat and others cold, and some can subsist longer without nourishment than others ; so we see a remarkable instance in the camel, which can go so long without water in the dry and barren deserts, where there is such

a scarcity of it, that the beasts of burden which are common in these colder climates, could be of little or no service there. And what an amazing instance of Infinite Wisdom is there in the provision of food for all the creatures, considering so many thousand different species which exist on the surface of this terraqueous globe, yet not one of the least of them is overlooked; he giveth to each of them its portion of meat in due season, and each of them hath its proper nourishment. Therefore, considering all these wonderful works of the Almighty, how ought our souls, and all that is within us, be stirred up to bless and magnify his holy name; when, seeing what parental care he takes of the inferior part of the creation, we may be convinced that he careth much more for us who are his noblest work, in whom he hath placed immortal souls, made us wiser than the beast of the field, and taught us more understanding than the fowls of the air, and under whose subjection he hath put all the creatures of the lower world, to supply our necessities one way or other, either for food or raiment.

How amazing is the fidelity of the Dog! his soothing fondness of his master, his hatred of strangers, the surprising acuteness of his nostrils in finding out his prey, and his indefatigable ardour in the pursuit thereof.

The peculiar construction of frame in those animals, ordained for swiftness and flight, is al-
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so demonstrative of Wisdom and Design: No man can contemplate a Deer, for instance, and not perceive that its light and elegant frame is particularly calculated to bear it away with speed from that terror to which nature hath made it tremblingly alive.

In other creatures, where strength is necessary to swiftness, we perceive an amazing combination of both, a striking instance hereof we have in that noblest of domestick animals the Horse, in whose beautiful and regular frame we may discern the strength and courage of the lion, joined with the fleetness and elegance of the deer; and as the greater part of animals feed in the night as well as in the day, it was absolutely necessary to their subsistence that they should be endued with a sharpness of sight superior to that of the human species, who have less occasion to be employed in the dark, and who can supply the defect of natural by artificial light. This remark is also verified in the horse, who in the most dark and pitchy night will not only nicely distinguish his way, but carefully avoid objects which are shrouded in total obscurity from the view of his rider: The many qualities of the horse, by which he contributes to the profit, convenience, and delight of mankind, will afford a large field for the display of eloquence.

Survey the warlike horse! didst thou invest
With thunder his robust, distended chest:

No sense of fear his dauntless soul allays,
 'Tis dreadful to behold his nostrils blaze;
 To paw the vale he proudly takes delight,
 And triumphs in the fulness of his might.
 High-rai'd, he snuffs the battle from afar,
 And burns to plunge amid the raging war;
 And mocks at death, and throws his foam around,
 And, in a storm of fury, shakes the ground.

In those creatures which are not endued with peculiar quickness of sight, nature has given either exquisite feeling or smelling; to those not remarkable for any of these, amazing swiftness; or where that is denied, an assiduity and a cunning which answers all the ends of swiftness. The Mole, to which sight is almost unnecessary, approaches nearly to blindness; but this defect is sufficiently compensated by that wonderful quickness in hearing for which this creature is so celebrated, and which is so necessary for its avoiding destruction in that mode of life whereto it is ordained. Who can help admiring in the Hound that sagacity of smell which enables it to trace the deer, fleet as the wind, through all its recesses, and to baffle the swiftness whereto its own is in the highest degree unequal.

The Ox, the form of whose back declares he was not designed to carry burdens, but his neck is fit for the yoke, and his broad and strong shoulders to draw the cart and the plough.

Those animals of the voracious kind, which are formidable to other creatures, are consequently avoided; and those which are obliged
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to seek their prey by night, are generally remarkable for the strength of their sight, as the Lion, Lynx, Tyger, and Leopard: Another particular deserving especial attention, concerning this sense of sight, is the manner of the eye's situation, which again is strikingly adapted to the different state and exigencies of the animal wherein it is found. In man, and some other creatures, it is so placed as to look directly forward, but withal it is so ordered as to take in nearly the hemisphere before it: In birds, and in other creatures, the eyes are so seated as to take in nearly a whole sphere, that they may the better seek their food and escape danger; and in some creatures they are seated so as to see best behind them, or on each side, whereby they are the better enabled to discern and escape the enemy which pursues them: In Hares and Rabbits, for instance, the eyes are not only remarkably protuberant, but placed so much towards the sides of the head, that they take in almost the whole sphere; whereas in Dogs, their enemies and pursuers, their eyes are set much more forward in the head, to look that way rather than backward.

The combination of strength, swiftness, and other peculiarities, may be traced in a variety of other creatures, more particularly those of the savage kind, whose appetites require in them swiftness to pursue, and whose enemies require in them great strength to defend. And can any man suppose that such and so necessary a combination

bination can be any other than the production of Supreme Wisdom and Provident Design? The more minutely the animal world is considered, the more manifestly will the Wisdom and Design of the Creator appear. Swine, who dig in the earth for roots and other food, have their neck and all parts of their head very well adapted to that service; their neck short, brawny, and strong, their eyes set pretty high out of the way, their snout long, their nose callous and strong, and their sense of smelling very accurate, to hunt out and distinguish their food in mud, under ground, and other like places where it lies concealed.

What hath been said of Swine is no less remarkable in the Mole, (as hath been observed before) whose neck, nose, eyes, and ears, are all fitted in the nicest manner to its subterraneous way of life.

It is also a singular provision nature hath made for the strength of the Lion, it being reported that most of its bones are not hollow: Galen saith that those in the legs, and some other parts, have only a small and obscure cavity in them.

But fiercer still the lordly lion stalks,
 Grimly majestic in his lonely walks :
 When round he glares, all living creatures fly,
 He clears the desert with his rolling eye.
 In gloomy den lie hid his tawny brood,
 And, couch'd in dreadful ambush, pant for blood :

Or

Or stretch'd on broken limbs, consume the day,
 In darkness wrapt, and slumber o'er their prey.
 By the pale moon they take their destin'd round,
 And lash their sides, and furious tear the ground;
 Now shrieks and dying groans the desert fill,
 They rage, they rend, their rav'nous jaws distill
 With crimson foam, and when the banquet's o'er,
 They stride away, and paint their steps with gore.
 In flight alone the shepherd puts his trust,
 And shudders at the talon in the dust.

While the covering of animals, providently designed, are in the highest degree accommodated to themselves, those coverings are in a thousand instances rendered useful to man: Indeed to them commerce and manufacturies owe their busiest employments, and to Sheep in particular our own country owes its most staple commodity; utility, elegance, and luxury, are served in a variety of instances from them; indeed almost the whole of the human apparel, from the crown of the head to the sole of the foot, is the produce of the animal cloathing, (except that to vegetables we owe the pleasing, cool, and healthful habits of linen and cotton) which man, by the exercise of his genius and industry, renders not only useful to his own covering, but in many respects to his support and wealth.

From the skins of animals we proceed to the offensive weapons wherewith those are supplied which are designed to live by prey, and in a state of hostility with others; the sharpness and strength of their teeth and claws in some is wonderful, as is the amazing force and almost irresistible

fistible violence of the horns and heels in others. But while the instruments of offence and defence of this kind are found in creatures of prey, where we can sufficiently trace their necessity and advantages, we find them not in those animals of the tame kind, which being of a more peaceable nature, and under the immediate protection of man, want not those arms to annoy others or defend themselves, and therefore as nature does nothing in vain, we find they are not supplied with them.

The senses of animals are truly deserving of the minutest scrutiny, and will afford the mind the most ample scope for reflection and wonder: The sight of some is much more acute and extensive, in others the hearing is more quick; in some the taste more exquisite, and in others the feeling more nice, as hath been observed before.

If we consider the structure of the outward ear in quadrupeds, its form is agreeable to the posture and slower motion of their bodies, and in these too various according to their various occasions; in some large, erect, and open, to hear the least approaches of dangers; in others covered, to keep out noxious bodies; and moreover as the form of this organ is various in various animals, so in each of them its structure is very curious and observable, being in all admirably contrived to collect the wandering circumambient impressions and undulations of sound, and to convey them to the sensory within. The prone posture
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of the quadrupeds is the most useful and beneficial to themselves, as also most serviceable to man, for they are hereby better made for their gathering their food, to pursue their prey, to leap, to climb, to swim, to guard themselves against their enemies, and in a word to do whatever may be of principal use to themselves; as also they are hereby rendered more useful and serviceable to man for carrying his burdens, for tilling his ground, yea even for his sports and diversions. How gracious is the Father of Heaven in his dispensations towards us, and what admirable Wisdom is discernible in all his works! we have especial reason to be thankful to him for his no less kind than wonderful contrivances of our bodies, so we have reason to acknowledge and admire the same Creator's work and contrivances in the large family of animals, in every particular respect curiously contrived, and made for that especial posture, place, food, and office or business which they obtain in the world, wherein we find that every thing is done for the best, all wisely contrived and incomparably fitted up, and every way worthy of the Great Creator; and he that will shut his eyes and not see God in his works, even of the poor beasts that perish, of such an one we may use the Psalmist's expression, that he is like those beasts.

BIRDS. As to Birds, there is a large province to expatiate in; yet I cannot omit taking a view of this part of the creation: The works of God are not more admirable for their wisdom and design,
than

than for their variety; a variety perfectly amazing, and which is so extensive, that it confounds all human imagination: The royal prophet, enraptured at the idea, observes, "How manifold are thy works!" so manifold, that even the view of any species of beings, animate or inanimate, is too large for the comprehension of man; this variety is very observable in the feathered tribe. As birds have a different motion from other animals, and live partly in the air and partly on the land and waters, so are their bodies accordingly shaped, and all their parts incomparably fitted for that way of life and motion.

The shape and make of their bodies not thick and clumsy, but incomparably adapted to their flight; the neat position of the feathers throughout the body not ruffled or discomposed, some this, some a contrary way, according to the method of chance; but all artificially placed for facilitating the motion of the body, and its security at the same time, by way of cloathing; the wings, the grand instrument of motion, are made with great skill, and placed in the most commodious part of the body, to balance it in the air, and facilitate its motion. The pectoral muscles deserve especial remark, by reason they are much stronger in birds than in man, or any other animal not made for flying. The tail is also in flight considerable, greatly assisting in all ascents and descents in the air, as also serving to steady flight by keeping the body upright in the air, by its readily turning and answering every motion

motion of the body. What rower on the water, what artist on the land, what acutest mathematician, could give a more agreeable and exact motion to the wings than these untaught flying artists do to theirs? serving not only to bear their bodies up in the air, but also to waft them along therein with a speedy progressive motion, as also to steer and turn them this way and that way, up and down, faster or slower, as their occasions require or their pleasure leads them. Next to the parts for flight let us view the feet and legs; a curious observer will remark, throughout the legs of animals, how immediately they are adapted to their several necessities; we may observe it particularly in the feathered creation, in the webbed feet and short legs of those whose lives are to be passed on the water, and in the very long legs as well as necks of those who are to hunt out their food and search it in the waters; this is seen in general, such birds as have long legs have also a long neck, because otherwise they could not commodiously gather up their food either on land or in the water; but, on the other hand, those which have long necks have not always long legs, as Swans, Geese, &c. because being appointed to find their food at the bottom of rivers, &c. long necks are absolutely necessary, whereas other legs than those formed for swimming would be useless; we may observe too respecting the neck, that it is often so situated as to counterpoise the body in flight; we have sufficient instances of this in Geese, Ducks, and many other aquatic birds,

birds, whose bodies being made for the convenience of swimming, their wings are placed out of the centre of gravity nearer the head; but the extending the head and neck in flight, causeth a due equipoise and libration of the body upon the wings, which is another excellent use of the long necks of these birds. In the Heron, whose head and long neck, though tucked up in flight, overbalance the hinder part of the body, the long legs are extended in flight to counterpoise the body, as well as to supply what is wanting in the tail from the shortness of it; for the tail, as hath been before observed, is in birds another wonderful part, serving greatly to their assistance in flight; a circumstance highly deserving notice in the feathered creation, for it cannot fail to strike the most cursory observer; How admirably fitted for this purpose is the cloathing, the wings, and the whole structure of birds! Can any man now be so absurd as to think that these peculiarities in the animal world, to which a thousand others equally or more striking might be added, could proceed from any other cause than consummate Wisdom and unerring Design?

The Eagle has always been reckoned the king of birds, whether on account of the superiority of his strength, the terror that he strikes into so many other animals on whom he preys, his natural fierceness, or the rapidity or elevation of his flight. It is said that this bird lives a century, and increases in bulk to his death. Naturalists have remarked that the eagle has a quick and

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threaten-

threatening eye, a little sunk in the head, and protected by the prominency of the forehead, which resembles an eye-brow. It is said that the reason why eagles can look stedfastly on the sun, and support its fiercest rays, is because they have two eye-lids; one with which they shut their eyes entirely; the other, which is thinner, they draw over them when they look upon a luminous object, which renders the object much more supportable: However this be, it is certain that the eagle rises to a prodigious height, to this instinct he owes the renewal of his strength and youth: It is also said that every ten years his feathers become heavy and less proper for flight, and that he then makes an effort and approaches nearer the sun than usual, and after being excessively heated, he plunges immediately into the sea; after this his feathers gradually fall off, and new ones supply their place, which restore him to his pristine strength: It is this particular, perhaps, which David intended to express in the following words: "Thy youth shall be renewed like that of the eagle." The voracity of this bird is so great, that he ravages all the neighbouring places, which are scarce sufficient to furnish him with prey competent for his support; hence it is remarked that two eagles are rarely found in the same quarter: All the other birds are afraid of the eagle, they quake and tremble at his cry; nor are the fishes safe from his voracity, he perceives them even at the bottom as he skims over the seas and lakes, plunges immediately down with the rapidity of an arrow,

arrow, and drags them to the bank, where he devours them. This wonderful instinct is referred to in Job xxxix. 27, &c. He attaches himself to his young with a remarkable affection, even to the exposing his own life to preserve them; he is seen fluttering in various ways round his nest to teach them to fly; he takes them afterwards upon his back, in such a manner that the fowler cannot hurt the young without piercing thro' the body of the old one; quits them in the middle of his course in order to prove them, and if he perceives that they cannot as yet support themselves alone, and are in danger of falling, he darts himself below them with the greatest rapidity, and receives them between his wings. He is the only bird into which nature hath instilled this kind of instinct, which the scripture has chosen as an expressive symbol of the tenderness with which God protected his people in the wilderness: "I bare you, (says he) on eagle's wings, and brought you unto myself," Exod. xix. 4. so Deut. xxxii. 11. "As an eagle stirreth up her nest, fluttereth over her young, spreadeth abroad her wings, taketh them, beareth them on her wings, so the Lord, &c." Frequent allusions are made in scripture to the swiftness of the eagle's flight: "My days are passed away as an eagle," says Job ix. 26. "Riches fly away as an eagle towards heaven," Prov. xxiii. 5. "Are swifter than eagles," Lam. iv. 9.

Tho' strong the hawk, tho' practis'd well to fly,
 An eagle drops her in a lower sky:
 An eagle, when deserting human sight,
 She seeks the sun in her unwearied flight.

Did thy command her yellow pinion lift,
 So high in air, and seat her on the clift?
 Where far above thy world she dwells alone,
 And proudly makes the strength of rocks her own.
 Thence wide o'er nature takes her dread survey,
 And with a glance predestinates her prey!
 She feasts her young with blood, and, hov'ring o'er
 Th' unslaughter'd host, enjoys the promis'd gore.

Swallows are birds of passage, have remarkably short legs, and their toes grasp any thing strongly which is useful to them in building their nests, and other such occasions as necessitate them to hang frequently by their heels; but there is far greater use of this structure of the legs and feet, if the reports be true of their hanging by the heels in great clusters, (after the manner of bees) in mines and rocks by the sea all the winter: They build the walls of their nests with mud tempered and tied together with straw, but where mud is not to be found, they carry water upon their wings and tails, and turn dust into clay, and, tempering that as we do mud, make it their mortar: Now making use of the materials before them, and adapting them to their appointed ends, seems to be the ordinary limits of instinct; but to make new materials from the combination of substances seemingly different, and at that instant contrary in their qualities, the one wet and the other dry, appeareth to be the work of another Power more enlarged and enlightened than simple instinct, yet aiding and assisting to the attainment of its ends.

E'er yellow autumn from our plains retir'd,
 And gave to wintry storms the varied year,
 The Swallow race, with foresight clear inspir'd,
 To southern climes prepar'd their course to steer.
 On Damon's roof a grave assembly sat,
 His roof a refuge to the feather'd kind,
 With various look he mark'd the nice debate,
 And to his Delia thus address'd his mind :
 Observe yon twitt'ring flock, my gentle maid,
 Observe, and read the wond'rous ways of heav'n !
 With us thro' summer's genial reign they staid,
 And food and lodging to their wants were giv'n.
 But now, through secret prescience, well they know
 The near approach of elemental strife,
 The blust'ring tempest, and the chilling snow,
 With ev'ry want and scourge of tender life.
 Thus taught, they meditate a speedy flight,
 For this e'en now they prune their vig'rous wing,
 For this consult, advise, prepare, excite,
 And prove their strength in many an airy ring,
 No sorrow loads their breast nor swells their eye,
 To quit their friendly haunts or native home,
 Nor fear they launching on the boundless sky,
 In search of future settlements to roam.
 They feel a Pow'r, an Influence all Divine !
 Which warns them hence, they feel it and obey,
 To this Direction all their cares resign,
 Unknown their destin'd stage, unmark'd their way.
 'Tis thus life's chearful seasons roll away,
 Thus threats the winter of inclement age,
 Our time of action but a summer's day,
 And earth's frail orb the sadly varied stage.

It has often been remarked, that the love of
 parents to their children is commonly more ar-
 dent than that of children for their parents,
 though from the state of things, and from the
 obligations which children owe their parents,
 one might reasonably expect it to be otherwise :
 The offspring both of the human and animal

race come into the world feeble and helpless, and if the parental affection were not exceedingly forcible, they must perish in their weak and defenceless condition, and the creation would thus be speedily brought to an end: There is not the same reason for the return of affection in the offspring, and therefore we rarely find it in the animal world; soon as the young is able to provide for itself a mutual forgetfulness generally ensues, and the parent grows as regardless of its offspring as the offspring of its parent.

There is however one creature which contradicts this almost general rule in the animal world, and which is as remarkable for its love to its parents as other creatures are for their love to their young; this is the Stork, whose very name in the Hebrew language signifies mercy or pity, and whose name in the English seems to be taken from the Greek word *Storge*, which is often used in our language for natural affection: It feeds on serpents, frogs, and insects. The stork is a bird of passage, and is spoken of as such in scripture, Jerem. viii. 7. "The Stork knoweth her appointed time, &c." Its love to its parents is most remarkable, whom it never forsakes, but tenderly feeds and defends even to death, and hence one of our poets speaks thus finely of the stork:

The Stork's the emblem of true piety,
Because when age has seiz'd and made his dam
Unfit for flight, the grateful young one takes
His mother on his back, provides her food,

Repaying

Repaying thus her tender care of him
 Ere he was fit to fly, by bearing her.

How amiable is filial piety! observe, O ye children, and imitate, and let not the example of a bird upbraid and condemn you; but, on the contrary, stimulate your souls to the discharge of this most pleasing duty: Could you be sensible of the anxious thoughts, the sleepless nights, the watchful days your parents have passed for you, of the bleeding fears, the affectionate hopes, and all the unutterable concern which throbs in their bosoms for you, a sympathetic gratitude would fill your souls, and you would think it your highest happiness (as be sure it is your indispensable duty) by every possible means to make them some amends, and to sooth the decline of their days with all the lenient assuatives of filial piety and love: And, oh! how exquisitely conformable, how divinely pleasing to rock the cradle of declining age, and to return the unspeakable obligations of parental care.

Parents who take that care, who are diligent to improve the minds of their children in true religion and virtue, will rarely be disappointed of that return: Indeed love alone, mere natural affection may not be depended upon, being regarded as a thing of course which a child is not much concerned to return, and which loses much of its force when the child meets with other objects to divert its affections; but a mind trained up in wisdom and virtue can never be ungrateful to its best benefactors; the early impressions
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of a well-managed authority are never wholly effaced, and considering the advantages which nature gives parents, it is easy to establish a lasting dominion over their supple spirits, if they are not intoxicated into a shameful neglect of their children and themselves; for children are easily taught to stand in awe of their parents, to regard their persons as sacred, and their commands as indisputable. Happy parents, who thus secure the best love of their children! happy children, who love and obey their parents! they shall be blest of their God, they shall not fail of their reward.

The Ostrich has the largest body of all birds except the Emew or Cassiowary, which, tho' not so tall, is of equal bulk: It is seven feet in height from the top of the head to the ground, and from the back to the same place it is about four feet, and consequently the neck from the top of the head is three feet long, from the top of the head to the rump, when the neck is stretched out in a right line, it is six feet long, and the tail is about a foot; one of the wings without the feathers is a foot and an half, and being stretched out with the feathers, is three feet; the plumage is much the same in all ostriches, that is generally black and white, though some of them are grey; the largest feathers are at the extremities of the wings and tail, and are generally white; the end of the foot is cloven, and has only two very large toes of unequal length, which, like the leg, are covered

vered with scales, the largest toe only having a claw. The ostrich is the most greedy bird known, for it will devour leather, bread, hair, or any thing else given to it; the gizzards of such as have been opened in Europe have been found full of hay, barley, beans, bones, and stones, some of which were as large as a pullet's egg; however it does not digest iron and stones, as hath been commonly said, but voids them whole: They lay very large eggs, some of which weigh fifteen pounds; the shell of them is very hard, and it has been generally believed that they are laid in the sand, and hatched only by the heat of the sun. Some authors say that ostriches never come near their young after they are out of the shell; others, that the young ones being unable to walk for several days after they are hatched, the old ones during that time are very careful in feeding and defending them, in-somuch that it is not safe for any person to come near them during that season; but they very soon forsake and neglect them. It is on all accounts agreed that the ostrich is a very stupid bird, cruel, and soon forgetful of its young; it is spoken of in scripture as the symbol of cruelty and forgetfulness, see Lament. iv. 3. Job xxxix. 13, &c.

Who in the cruel ostrich has subdu'd
A parent's care, and fond inquietude?
While far she flies, her scatter'd eggs are found,
Without an owner, on the sandy ground:
Cast out on fortune, they at mercy lie,
And borrow life from an indulgent sky;
Adopted by the sun, in blaze of day,
They ripen under his prolific ray:

Unmindful

Unmindful she, that some unhappy tread
 May crush her young, in their neglected bed :
 What time she skims along the field with speed,
 She scorns the rider and pursuing steed.

The Peacock is justly admired for the length and beautiful spots of his tail ; his head, neck, and most part of his breast, are of a deep blue ; hath a tuft on its head of green feathers tipped with white ; the neck is long and slender ; the back is of an ash colour, spotted with black ; the rump is of a deep green ; the long feathers of the tail are nearly of a chesnut colour, elegantly beautiful, with gold lines, ending in tips of a very deep green, with circular spots of four different shades or colours, the first a golden, the second a chesnut, the third a green, and the fourth or middle of a beautiful blue ; the thighs, legs, and feet are nearly of an ash colour, spotted with black, and the belly of a bluish green. This beautiful bird feeds with cocks and hens and other tame fowls.

How rich the peacock ! what bright glories run
 From plume to plume, and vary in the sun !
 He proudly spreads them to the golden ray,
 Gives all his colours, and adorns the day :
 With conscious state the spacious round displays,
 And slowly moves amid the waving blaze.

The reflective reader will note, in every instance produced, the great beauty and variety of the Creator's works, which all unite to attest his Power, his Goodness, and Wisdom.

The structure of the outward ear in birds is of a form proper for flight, not protuberant, because

cause that would obstruct their progress, but close and covered, to afford the easier passage through the air.

They who as weakly as wickedly endeavour to attribute all to chance and second causes, would do well to inform us how it comes to pass that the destructive birds, (as the Candour, a native of America, of the eagle kind) are so seldom found, are so slow in increase, while the fowls of an useful and beneficent sort multiply so amazingly, and so plentifully contribute to our support and delight? Why should the hen or the turkey, the duck or the partridge lead forth such a numerous breed, while the terror of Peru sits desolate with its single offspring on the top of the rocks?

When we consider the bird creation, the prodigious variety in their bills, wings, and claws, it cannot fail to strike us, nor can we imagine that all these different forms are no more than the mere play of nature: When we see how exquisitely designed and accommodated is every part of the creation, a nearer and more accurate survey will tend abundantly to convince us, that all these various parts, in different creatures, are calculated for the accommodations of their wants; they are a set of implements proportioned by the All-wise and Original Designer to the nature of their labours and manner of life, and he who wants to be satisfied of this, will do well only to consider a few instances, which will give him

him an additional proof of his Creation, and of his consummate Wisdom who planed and perfected this amazing scheme of things. Let the Speculist turn to the hard-beak'd Sparrow, and other small birds which live upon seeds; to the Woodcock, the Snipe, the Curlew, which extract their aliment from the earth; the Wood-pecker, whose horny bill is employed in picking insects from the hard wood; to the Heron, the Stork, the Swan, the Goose, and he will be assured that these too, however minute, proclaim a Wise and Good Creator.

Let us consider the wonderful natural sagacity and instinct of the irrational animals in the convenience and method of their habitations, and no less in the fabrick of them; and with what inimitable art do these poor untaught creatures lay a parcel of rude sticks and straws, moss, and dirt together, and form them into commodious nests! with what curiosity do they line them within, wind and place every hair, feather, or lock of wool, to guard the tender bodies of their young, and to keep them warm! and with what art and craft do many of them thatch over and coat their nests without, to deceive the eyes of spectators, as well as to guard against the injuries of the weather! with what prodigious subtlety do some foreign birds not only plait and weave the fibrous parts of vegetables together, and curiously tunnel them, and commodiously form into nests, but also artificially suspend them on the tender twigs of trees,

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to keep them out of the reach of rapacious animals.

And as to the wonderful instinct of incubation, it is utterly impossible that ever unthinking, untaught animals should take to that only method of hatching their young, was it not implanted in their nature by the Infinitely Wise Creator. But so ardent is their desire, so unwearied is their patience when they are engaged in that business, that they will abide on their nests for several weeks, deny themselves the pleasures and even the necessities of life, some of them even starving themselves almost rather than hazard their eggs to get food ; and others, either performing the office by turns, or else the one kindly seeking out and carrying food to the other, engaged in the office of incubation : When the young ones are produced, not only with what care do they feed and nurse them, but with what surprising courage do all or most creatures defend them ! It is somewhat strange to see timid creatures, who at other times are cowardly, to be full of courage and undaunted at that time ; to see them furiously and boldly encounter their enemy instead of flying from him, and expose themselves to every danger rather than hazard and forsake their young : How will they caress them with their tender parental voice, put food into their mouths, suckle them, cherish and keep them, teach them to pick and eat, and gather food for themselves : And is not therefore all imaginable honour and praise due
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to that Infinite Artist, that hath so admirably contrived and made all the noble variety of birds; that hath with such incomparable curiosity and art formed their bodies from head to tail, without and within, that not so much as a muscle or bone, no not even a feather, is unartificially made, misplaced, redundant, or defective, in all the several families of this feathered tribe; but every thing is so incomparably performed, so nicely fitted up for flight, as to surpass even the imitation of the most ingenious artificer among mortal rational beings.

INSECTS.

Indeed the minutest Insect which crawls on the earth, or flutters in the breeze, testifies the hand of reason and design: It is impossible to contemplate a Spider forming its surprising web, with such a symmetry of parts so minutely adapted to that end, without acknowledging the hand of Divinity; and he must have a very narrow grovelling mind whose ideas are not raised to the Almighty Former, when he beholds a little laborious Bee collecting the sweets from flowers, loading with the liquid gold its burthen'd thighs, and forming with those surprising instruments wherewith nature hath supplied it, cells so compact and proper, so geometrical and exact, that the wisest mathematician could not devise a better combination for the purpose.

While some to guard, and some to store the hive,
In active diligence their task pursue,
The anxious bees survey a commonwealth;
How peaceful, lovely, and harmonious
On ev'ry side! nor ling'ring discontent

Low'rs

Low'rs lazy on the wing ; nor weary pain,
 With force destructive, the great work retards.
 To fill the well-form'd magazine of sweets
 Each rushes forth in turn, and o'er the heath
 Or devious strays, and from the scanty shrub
 Extracts mellifluent food, or thro' the lawn,
 Spring-broider'd—where the dewy daisies smile,
 Roams all attentive to the arduous charge,
 Domestic—forth from ev'ry vivid bloom,
 Pride of the flow'ry field, or garden gay,
 V'ilet or rose, grateful to sight, smell, taste,
 With fraud fore-amnestied the rover draws
 Odours essential, and with mystic pow'r
 Unknown and inconceivable, prepares
 The liquid, glutinous, and luscious balm.
 Say, thou minute confectioner, what art
 Accumulates the comb ? or is't the effect
 Of nature's potent law, that word which clothes
 Creation with its variegated robe
 Of verdure hue—thrice beauteous garb—that now
 Attracts thy slight laborious ! Yes, 'tis she,
 Kind uncorrupted nature calls thee forth,
 Nor leaves thee loit'ring at thy straw-built dome.

- The Silk-worm, ordained by Providence to
 a stationary life, eats only to live and lay up
 that rich store which speedily she will produce
 with indefatigable labour from her bowels ; for
 the life of this little industrious insect, subject
 to various mutations, is not very durable in any ;
 it seems to live only to weave its curious web,
 and offer its silken gold to mankind ; when
 careful to preserve its species, willingly it re-
 linquishes being, and, contented with its work,
 peaceably submits to dissolution : Nothing sup-
 plies man with a richer or more elegant orna-
 ment than these little worms, and nothing sup-
 plies him with a more pleasing source of con-
 templation than their wonderful transmigra-
 tions:

tions : The worm, when it first leaves the egg, is extremely small, it is likewise perfectly black, but its head is of a more shining sable than the rest of the body : After undergoing many changes it prepares for a solitude, by building with its head a little cell of amazing structure and beauty. A piece of paper rolled up is usually given it, into which it retires, and begins to move its head to different places in order to fasten its thread on every side : All this first work looks like confusion, but it is not without design ; the worm neither arranges its threads nor disposes them one over another, but distends a sort of cotton or flue to keep off the rain, for nature having ordained them to work under trees in the open air, they never change their method when they are reared in the house. The worm after this regularly bending its head up and down, and then crossing to every side, confines its motions to a very contracted space, and by degrees entirely surrounds itself with silk : The remainder of the operation is invisible, but one may guess how it is accomplished : The animal, to finish its mantle, draws out of its bag a gum, which it spins into a less delicate silk, and then thickens it with a strong glue, which serves to bind all the last ranks of this silk over one another : We mention a gum drawn from its bag, to understand which the reader must know that this little insect, which is furnished with heart, lungs, intestines, &c. and composed like other caterpillars of several elastic rings, and likewise

likewise accommodated with feet and claws, is also supplied with a very long and slender bag, which encompasses, with almost innumerable folds and windings, the ventricles and intestines, and contains a sort of gum, coloured like a marygold, of which the worm makes its silk. The silk-worm has under her mouth a pair of holes, through which she draws two drops of the gum that fills her bag; these are like a couple of distaffs that continually supply the materials out of which she spins her thread: She fixes both these drops where she pleases, and then draws back her head, or lets herself fall. The gum that flows through these openings receives its form, and lengthens into a double thread, which immediately loses the fluidity of the liquor that composes it, and acquires a consistence sufficient to sustain or infold the worm at the proper season. She is never deceived in calculating the due thickness of the thread, and always makes the strength of it proportionable to the weight of her body. She unites the two threads by glueing one over the other with her fore-feet, and, when the time for making her cone comes, she employs her kind of fingers which her fore-feet are furnished with, either in turning or glueing the threads together, or fixing herself sometimes in one place and sometimes in another. The attitude in which she spins is graceful, and the industry admirable that shines through all her work. The silk-worm by this wonderful means having finished her work, is inclosed, you observe, with three coverings entirely different,

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which afford her a succession of shelter ; the cotton or flue keeps off the rain ; the fine silk forms a tissue which prevents all access of air ; and the glued silk, which composes the thick shell that touches the worm, not only repels the water and air, but also renders the inside of this habitation inaccessible to the cold. After she has been in this retreat long enough to be changed into a nympha, or chrysalis, by divesting herself of her fourth skin, and to be transformed into a butterfly by a gradual expansion of her horns, wings, and feet, that were glued up and infolded in the chrysalis as in a case, it is then time for her to make her appearance through the shell, the silk, and the down in which she seems to be so strongly immured. When the worm has exhausted herself to furnish the materials of her three coverings, she resigns the form of a worm, her spoils drop all around the chrysalis, which is not converted into a perfect butterfly till the expiration of about fifteen days, and sometimes more. This new animal, when its formation is compleated, extends its horns, together with its head and feet, towards the point of the cone, which, not being closed up in that part, gradually yields to its efforts, it enlarges the opening, and at last comes forth. Now as this evacuation corrupts the ball and damages the silk, care may be taken to prevent that inconvenience ; for as a small number of butterflies are necessary for a stock for the ensuing year, (one female laying about 500 eggs) a few cones only are necessary for this purpose, while
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the other cones from which the filk is to be wound are exposed in the open sunshine, (and in some cases in ovens properly heated) and the heat, in spite of all the different textures, penetrates to the chrysalis, and kills her in six or seven hours before she has soil'd any thing. The butterflies, or rather the moths, which are suffered to proceed from the cones, never wander far from the place they quitted: The male is more lively and smaller than the female; she is larger because she is fuller of eggs, which she lays a few days after. No reasonable being can contemplate so extraordinary an insect as this before us, can trace it from the egg to the chrysalis, can behold its admirable produce, and not be perfectly sensible that this is all the work of a Provident Designer and Great Creator, who, in the minutest insects as well as in the largest, manifests the most superlative Wisdom and Goodness that such regular transmutations should take place: That the animal should proceed to its destined perfection by such gradual stages, is a full proof that no blind chance but Wisdom, which never errs, appointed the orderly gradation, and gave the wondrous instinct and fashion to the worm by which it proceeds in its appointed order. Let a man only weigh in his mind what we have mentioned of the bag, the gum, and the holes under the filk-worm's mouth, and doubt if he can, even from this single object's instruction, of the being of a God, and the Wisdom of his doings.

Now to the various silk-worm turn your eyes,
 Not Ovid's lively fancy could devise
 A change more wonderful than this displays;
 From a small egg matur'd by Phœbus' rays,
 A maggot bursts to light, then creeps a worm,
 And Thisbe's leaves support her tender form:
 She spins her curious web, and subt'ly roll'd,
 There sleeps securely in a silken fold;
 But soon to life awakes, and 'tempts the sky,
 On silver wings a beauteous butterfly.
 Thus the pale corse deserted by the mind,
 Tho' for a while to sleep and death consign'd,
 At the last trumpet's call shall rise again,
 To triumph over death and all his ghastly train.

Taught by the sacred writer, we are used to consider the little nation of Ants as emblems of sober and temperate industry; but perhaps we rest too frequently in general speculation, and do not consider these surprising insects with the accuracy they deserve, or we might learn other lessons of no inferior importance from them; like the Bee they are a community, united in a republic, governed by its own laws and politics; they have a kind of oblong city, divided into various streets, that terminate at different magazines; some of the ants consolidate the earth, and prevent its falling in, by a surface of glue with which they encrust it: Those which we commonly see gather splinters of wood, which they draw over the tops of their streets, and use them as rafters to sustain the roof; and across these they lay another rank of splinters, and cover them with a heap of dry rushes, grass, and straw, which they raise with a double slope to turn the current of the water from their magazines, some of which are appropriated

appropriated to receive their provisions, while in the others they deposite their eggs, and the worms of their young ones which proceed from them. As to their provisions, they take up with every thing eatable, and are indefatigable in bringing home their supplies; you may see one loaded with the kernel of some fruit, another bends under the weight of a dead gnat; sometimes several of them are at work upon the carcase of a May-fly or some other insect; what cannot be removed they eat on the spot, and carry home all that is capable of being preserved; their march, (when they go in quest of food) as well as their return from it, is under some regulation; the whole band moves in the same track, though they stop in their march when any proper prey is near at hand. Their next prevailing passion is to amass a store of corn, or other grain that will keep; and so provident are they for futurity, lest the humidity of their little cells should make the corn shoot up, we are told for a certainty that they gnaw off the buds that grow at the point of the grain; amazing force of instinct! You may often observe ants carrying or pushing before them grains of wheat or barley much larger than themselves. After they have passed the summer in constant employment and unwearied industry, they shut themselves up in the winter, and enjoy the fruits of their labour in peace. They nourish their young, as soon as they leave the egg, with an assiduity that employs the whole nation, and the care of their little progeny is esteemed a mat-

ter of importance to all the state. How strongly hath the Wise Author of nature implanted in all his creatures an attention to the welfare of their young ! What must they be stiled amongst the human race, who neglect their offspring ? When the young quit their eggs they are little worms, no larger than the common grains of sand ; and after they have for some time received their aliment, which is brought and distributed to them in common, they spin a thread and wrap themselves up in a white web, and sometimes in one that is yellow, at which period they cease to eat and become aurelias ; in this state, though they discontinue eating, their nature still proves very fatiguing to their parents ; these have generally several apartments, and remove their young from their nursery to some other mansion which they intend to stock with their young ; they either raise the aurelias towards the surface of the earth, or sink them to a distance from it in proportion as the season is either warm or cold, rainy or dry ; they raise them when the weather proves serene, or after a long drought is succeeded by gentle dews ; but at the approach of night, cold, or the appearance of showers, they clasp their beloved charge in their arms, and descend with them to such a depth, that one must then dig above a foot into the earth before these aurelias can be discovered. There are other things respecting this little and wonderful nation observable, such as their dispersing themselves from their habitations, and returning regularly to their respective homes ;
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their custom of removing their dead; their readiness to assist each other to carry their burdens or invade their enemies; also concerning the sting they carry in the extremities of their bodies, with the bag of corroding water which causes little tumours; as also the wings that are acquired by the males at a certain age to facilitate their acquisition of food, and which are refused to the females, that they may be more sedentary and devoted to domestic cares: But, omitting such things, let us contemplate these wonderful insects which continually present to our sight strong proofs of the Wisdom of Providence, of the wonderful efficacy of parental storge, and of the beauty and excellency of that industry and proper foresight which Solomon advises us to go and learn of them. Now that this great wisdom which the scripture attributes unto, and is discernible in, that little creature, is owing only to the instinct or infusions of the Great Preserver of the world is evident, because either this wisdom, thought, or forecast, is an act of the animal itself, or of some other Being that hath wisdom; but the animal being irrational, it is impossible it can be its own act, but must be derived or received from some Wise Being, and who? what can that be but the Infinite Lord, Preserver and Governor of the world, whose most minute works praise him in the loftiest strain, and raise our highest wonder and adoration.

Solomon, in his writings, is no less severe against the vice of idleness than he is zealous to inculcate

inculcate the virtue of industry, for he well knew that the former is a soil for every mischief to sprout up luxuriantly, whereas the latter is the happy parent of almost all social good. But how shall the idle be instructed? they will not hear the wise man's voice, they will not, they are too lazy to hear his admonitions, he therefore refers them to a familiar object, the little industrious ant, ("go to the ant, thou sluggard, consider her ways and be wise") which they have need only to look on and learn; stretched at length upon the side of a sunny bank, (as proper a situation for sloth as their hearts could wish) they may there see all the surprising effects of industry, and learn all the important fruits and advantages of it at their ease without stirring from the spot, without the expence either of toil or study, and in short without any other labour than barely that of withholding their eyes from sleep. Happy they who from this example grow wise, and habituate themselves to honest industry, which gives health to the body, increase to the estate, vigour and serenity to the soul, which renders a man useful and happy, and is a mark of genuine Christianity, which constantly inculcates diligent labours, and forbids meat to those who will not work. Happy the parents, who, stimulated by the wonderful affection for their young discernible in the animal world, take every method to improve and bless their offspring; and, amongst the rest, early and thoroughly acquaint them with the exercise of amiable and useful industry, while

while we may allow these little provident insects to teach us all a lesson of the utmost importance, the necessity of a diligent and seasonable preparation for a future and everlasting state: What is this world but a mere ant-hill? what are all our concerns but toils to bring home a grain of wheat, compared to eternity and its awful interests? and how sad will it be, what despicable sluggards shall we be called, if we let the season of provision, the summer appointed for laying up our store, the day of this transitory life pass without preparing for that unalterable state to which we are hastening, while we are more industrious than the ants to lay up stores for this short and uncertain period. Thou sluggard, if it be wise in thee to learn of the ant to make provision for the winter of life, for one short and uncertain season, is it not infinitely more so to lay up for all eternity, for a life of endless duration and inconceivable happiness?

Thus in battalia march embodied ants,
 Fearful of winter and of future wants,
 T' invade the corn, and to their cells convey
 The plunder'd forage of their yellow prey:
 The sable troops along the narrow tracks,
 Scarce bear the weighty burden on their backs;
 Some set their shoulders to the pond'rous grain,
 Some guard the spoil, some lash the lagging train,
 All ply their sev'ral tasks, and equal toil sustain. }

As for insects, those little weak, those tender creatures, yet what admirable artists are they in the business of nidification; with what great diligence

ligence doth the little Bee gather its combs from the various trees and flowers, the Wasp from solid timber, and with what prodigious geometrical subtlety do these little animals work their deep hexagonal cells, the only proper figure that the best mathematician could chuse for such a combination of houses; with what accuracy do other insects perforate the earth, wood, yea stone itself; and with what care and neatness do most of those little sagacious animals line those their houses within, and seal them up and fence them without; how artificially will others fold up the leaves of trees and plants, others house themselves in sticks and straws, others, (as for instance the Cadews, in their nympha or maggot state, Straw-worm, Cobbait, &c.) glue light and floating bodies together, and by that artifice make themselves floating houses in the water, to transport themselves at pleasure after their food or other necessary occasions of life. We must therefore conclude that those excellent ends they pursue, and that admirable art they exert, is none of their own, but owing to that infinitely Wise and Excellent Creator of all things.

REP-
TILES.

Having spent so much time upon the other parts of this work, and therein given such ample proofs of the Infinite Creator's wisdom, I shall only barely mention Reptiles; I should go too far to take notice of all particulars, as there are some things in which this tribe is somewhat singular; I shall therefore only mention their

motion,

motion, which is different from that of other animals, as vermicular in Worms, finous in Snakes, or like that of the Snail, or the Caterpillar, or the Multipedes, all incomparably made for those curious windings and turnings, undulations, and all the various motions of this reptile kind, which, in even this meanest branch of the creation, is another proof of the Great Creator's wise and curious workmanship.

As to the waters and inhabitants thereof, we FISHES,
 have there as ample and glorious a scene of the Infinite Creator's power and art as hath been set forth on the dry land: What an immense quantity of living creatures they contain; how different in kind, some of them are plunged in the deep, others sport on the surface, and some stick to the rocks by their shells; the vast bulk of some, and prodigious minuteness of others, together with the incomparable contrivance and structure of the bodies of all; the provisions and supplies of food for such an innumerable company; the business of respiration performed in a way so different from, but equivalent to, what is in land animals; the adjustment of the organs of vision to that element in which the animal liveth; the poise, the support, the motion of the body forwards with great swiftness, and upwards and downwards with great readiness and agility; all these things do lay before us a glorious and inexhaustible scene of the Divine Power, Wisdom, and Goodness.

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As the bodies of birds are nicely poised to fly in the air, so are those of fishes to swim in the water, every part of the body being duly balanced, and the centre of gravity accurately fixed to enable the fish to abide at the top or bottom, or any other part of the waters; the air-bladder is given to most fishes, the tail being the grand instrument of the motion of the body. Tho' the greater part of the fishes of the sea prey on each other, they err greatly who suppose these to be the only food of all; the sea has its pasturage as well as the land, and the vast Whale and all its kindred, although they will occasionally take down the small fish that come before their mouths in clusters, yet find their natural and general food among the herbage of the deep; this is abundant, and they only eat what rises for them; were they to feed only on other fishes, they would soon thin the seas, and soon after starve, for they are too voracious to feed on less than multitudes, and too unwieldy to pursue them. The Great Creator has given the most exact proportion to the shape of fishes, the gayest colours to their skin, and a polished smoothness to their scales; the eyes of some are surrounded with a scarlet circle, the back of others is diversified with crimson stains; view them when they glance along the streams, and while they are fresh taken from the water, and the burnished silver is not more bright, the radiant rainbow is scarce more beautiful; with the vigorous activity of their tails they shoot themselves through the paths of the sea, more swiftly than sails and oars can waft a barge.

Let us consider the exquisite contrivance and delicate formation of their gills, with the power of breathing and benefit of respiration ; a piece of mechanism infinitely surpassing, in the fineness of its structure, whatever is curious in the works of art.

Dolphins, as Sir Hans Sloane, in his voyage to Jamaica, informs us, are reckoned the swiftest swimmers that are, their bodies being contrived for that purpose ; there is as much pleasure in seeing them pursue the Flying Fish, as in hunting or hawking, the flying fish getting out of the water, where the dolphins cannot far pursue them ; the dolphins are likewise invited to the water surface, by throwing any thing upon it, being very voracious ; they love the company of a ship because of the scraps now and then thrown overboard, or the barnacles which grow to the ship's sides, insomuch that it has been asserted by some who have sailed in Guinea ships, that they have had the same shoals of dolphins follow them, for many hundred of leagues, betwixen Guinea and Barbadoes ; hence, may be, it was, that this fish was thought by some to be the dolphin of the ancients, and to be enamoured of men. One thing very remarkable in this fish, is the various colours it puts on before it dies, being usually yellow, with ranges or rows of small blue, and round spots, which very strangely alter, and afford that pleasure to the eyes, that I confess, says Sir Hans Sloane, I never saw any thing of this nature so surprising,

zing, but after all it comes to a very light blue colour; when dead, the dolphin is covered with a smooth hard skin; its body a roundish oblong, with a round snout turned a little upwards; the cleft of the mouth is long, and shuts very close; the teeth are small and sharp; its eyes large, but covered outwardly so much with the skin, that, generally speaking, nothing but the pupil appears: It is said to go with young ten months, seldom producing above one at a time, and that in the midst of summer; they live to a considerable age, some say 25 or 30 years; and they sleep with their snout out of the water; they will live three days out of water, during which time they are said to make such a mournful noise, as greatly to affect those who are not used to hear them.

The Sword Fish, when full grown, is more than twenty feet in length, and is not one of the nimble kind, but thick, heavy, and of an unmanageable frame; it is also worse provided for the several motions than any other fish, for it has no fins on the belly, and only one upon the back; the tail is large and hollowed, but though, in bulk and shape, it resembles in some degree the whale kind, this tail is not placed as in those fishes, but as in others; the whale breathes by means of the lungs, as land animals do, but the sword fish, although somewhat of their form, and in bulk resembling them, breathes at the gills like other fishes; the great and singular thing in the structure of this fish, is the weapon
from

from which it derives its name, and which is carried straight forward from the head in the form of a sword; this is five or six feet in length, and of the shape of that instrument, being sharp at the point and at both the edges, and which this fish sometimes uses in resentment, and the wound it makes must be fatal: The force with which it gives the blow may be guessed by an incident; a small vessel from the West-Indies being arrived at London, the master and crew spoke of a strange accident which they had noted in their journals, the ship tottered in her course at a certain moment, as if she had struck upon a rock, where yet there was no bottom to be found, the occasion was not discovered at the time, but afterwards, on cleaning the vessel, the sword of one of these fishes was found struck into the bottom, and broken off at about a foot from it; by the direction it appeared that the fish had pursued the ship and not met it, and the point had entered fifteen inches into the solid wood, in a slanting position; the ship had probably come over the sword fish as it was feeding, and perhaps had hurt it, the creature could only take this for a whale, and accordingly followed to revenge the insult. The sword fish, though so large, has but a small mouth, and in that no teeth, there are only a few rough gristles to supply their place, which is a proof that this creature is not a fish of prey; these gristles are sufficient to grind down the herbage of the sea, upon which he principally feeds, and it is by means of this weapon that he gets it in abundance and
with

with ease. Who, that reads these accounts, can fail in the warmest manner to cry out with the wondering Psalmist, " O Lord, how manifold are thy works, in wisdom hast thou made them all, the earth and the sea are full of thy riches."

Nature has designed many creatures to pass part of their lives under water, and part on land; but to all of them, except the Sea or River-Horse kind, she has given means of swimming; this has none. The Snake kind, by their motion of the whole body, pass along very swiftly under water, and the Otter has feet for swimming; the Sea-horse has to feed under water, yet it is the most unwieldy of all creatures, it comes out of the water in an evening to sleep, and when it goes in again it walks very deliberately over head, and pursues its course along the bottom, as easy and unconcerned as if it were in open air; the rivers it mostly frequents are very deep, and where they are also clear, this affords a most astonishing sight.

The River-Horse is as large as the largest horse, but its body is much larger, and its legs thicker and shorter; its skin is quite naked, it is black, very strong and coarse; the head is vastly bulky, and the mouth, which it has a way of opening very frequently, and of tossing up its head at the same time, is the most terrible that can be imagined; the teeth are blunt, but very thick and long, and are harder than

than any other animal substance; the tail is short and naked, and the feet are not solid like those of an horse, but are divided each into four parts in the manner of toes. The manner of its feeding, as seen by the Africans in some of their large rivers, where it is very frequent, is this; it walks very slow into a river, and seldom looks about it till it is nearly in the middle, the water there being deep, and consequently it being out of the way of disturbance, here it seeks about for the larger water herbs, and in particular for the root of a large water lilly, which is frequent there, and flowers under the water, people from a boat on the surface frequently see this; it will root up these with its nose like an hog, and the mouth and throat being very wide, it swallows them in vast morsels half chewed. The river-horse feeding on vegetables only, its flesh is delicate and white, although the skin looks forbidding: Those who have eaten of it say it is of a middle taste, between that of veal and pork: The natives kill it by way of food; this they sometimes take opportunity to do as it is asleep on the shore in the night; but their most usual way is in the day-time by a baited hook: This is a very singular sport, though a dangerous one; there are places towards the mouths of large rivers, as the Niger, the Nile, and such others, where this animal is frequent, and is often seen at its prey; he has occasion to breathe at times, though he can keep long under water, and, when feeding at his ease, his custom is once in ten minutes,

or thereabouts, to rise to the surface of the water. This he does from ever so great a depth, by a spring from the bottom made by all his feet at once, and having taken some fresh air and looked about him, he drops to the bottom again. The Africans, when they go on this expedition with a baited hook, take for it a season when there have not been rains, so that the river is clear, and they set out with their tackle for catching the creature, and with arms for their defence, in a boat capable to carry twenty people, though only five usually go in it; and these boats are built with remarkable strength. The roots of the water lilly, of which the creature is so fond, are of the thickness of a man's thigh; a piece of one of these of a foot long is the bait; they run the iron spike into the centre of this till it is entirely buried in it, and then letting it fall into the water, they let off as much cord from the reel as will give it room to go to the bottom. In this situation they let themselves down the stream; as they pass in this manner, they see often several of the river-horses feeding quietly at the bottom; the bait dragging along seems a fragment of the root, of which the creature is so fond, broken off by some accident, which, if it falls in the way of one that is hungry and ravenous, he is caught, he swallows it, and it goes down lengthways; as soon as it is swallowed the people in the boat give a violent jirk to the cord, the spike is turned crossways in his throat, and he is secure: Each man has a spear, with a point about twelve inches long, which they dart at him when he rises

to the surface, which generally dispatches him. The bolder people practise this sport singly, but the more wary go out in two boats, and a second cord is fastened to the first, which communicates with the other boat. When he is struck, if he rises at them, (which sometimes happens) at which ever boat he aims, those on the opposite side draw him away; and when he makes at them, the people in the first boat draw him back again; thus they keep him on the surface, and play with all his fury, some one person in each boat striking him with a lance till they have dispatched him.

Can any man that has any gratitude in him, persuade himself that he has no obligation to that God, who has surrounded the whole inhabitable earth with waters! Let him contemplate the depths of the sea, which in so many places is unfathomable, and the hand of the Almighty Creator might be manifested, as well by the deepest cavities as by the vastly extended superficies thereof. He has been graciously pleased to furnish it with such innumerable kind of fishes and other marine creatures, by the multitude of which so many men are continually fed; in-somuch that where no bread can be procured but with great trouble and charge, the same being dried, supplies the want thereof; not to mention here the inexpressible variety of fishes, by which the appetites and palates of so many eaters are gratified. Will a scepticor free-thinker dare to mention, that the sea likewise in this case, with all its fishes, were made without de-

sign ? Whereas he himself and all land creatures, could not be able to remain a quarter of an hour under water without dying. Is there then no knowledge required to form so many creatures after such a manner, as to be able to live always in the water and get their whole subsistence there, and bring forth their young in so great abundance ? Let him also consider how much the structure of the eyes of fishes differ from that of the land creatures, the first being adapted only to see in water, the other in air ; also the shape and form of fishes, where he will plainly discover all those qualities that are requisite to support them in water ; and since some of them can live only in salt and others in fresh water, let him observe with wonder that care is taken for the first by the sea, and for the last by rivers and fresh inland waters.

We may observe farther in fishes, that, in order to their progressive motion in water, they do not make use of their fins as oars to row with, nor after the same manner as birds do their wings in the air ; but by the help of their tails, much after the same manner as a boat moves when they put an oar out at the stern and paddle with it backward and forward ; these tails, like the oars, are broad at the bottom, that they may act with greater force upon the water, and are composed of a strong membranous matter, which is flexible ; that the muscles of the back are of such a structure, as to move the tail with a sufficient strength, even so far that the
violence

violence which the large kind of fishes, such as whales, exert therewith, is so terrible, that one cannot read the accounts thereof without being amazed.

Besides this, to the end that the fishes might be provided with every thing necessary towards swimming, and to stop that progress which they had acquired by their tails, they are provided with two fins on their sides, by which, when they extend them both together against the water, their motion may be stopt; and if they stretch out one and keep the other close, they may turn to that side where the fin is displayed, as we see happens to a boat which turns to that side where one oar is thrust out in the water to stop its progress. The eyes of fishes deserve to be mentioned here, which are not only peculiarly adapted to the element wherein they live, but in various instances remarkably quick of sight; a protuberant eye would have been extremely inconvenient for fishes, by hindering their motion in so dense a medium as water, or else their brushing through so thick a medium would have been apt to wear and prejudice their eyes, and therefore their cornea is flat; to make amends for which, as also for the refraction of water so different from that of the air, the Wise Contriver of the eye hath made the chrySTALLINE spherical in fishes, which in animals living in the air is lenticular and more flat, and by this provision they are endued with a sharpness of sight which is extremely necessary and admirably adapted to
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their mode of life, by which means, in some cases, they are enabled to escape, and in others to seize their prey; for as their darting motion through the water, swift and rapid, is in various cases attended with no sound, the acuteness of their sight is more requisite to see and elude danger. It must be acknowledged that fishes have something in them very wonderful; besides their being beyond comparison in greater numbers than the terrestrial animals, they infinitely surpass them in many qualities; the most savourous and exquisite meats have neither taste nor delicacy of certain fishes; the size of elephants does not come near that of whales and other monsters of the ocean; the strongest lions have not the strength of several of the fishes of the sea, which are said to be able to stop ships. What the Royal Psalmist asserts in Psalm civ. ver. 27, 28. ("These wait all upon thee, that thou mayest give them their meat in due season; that thou givest them they gather, thou openest thy hand, they are filled with good") affords us a glorious scene of the Divine Providence and Management, which doth exert itself particularly in so grand an affair as that of food, whereby the animal world subsists.

Most of the animals, birds, beasts, and creeping things, do by their smell find out their food; with what sagacity do some find it in the midst of mud and dirt; with what curiosity do the herbaceous kind pick and chuse such plants

as afford them wholesome food, or sometimes such as are medicinal, and refuse such as would destroy them, and all by the help principally of the smell, assisted by its near ally the taste. It is a great act of the Divine Power and Wisdom, as well as Goodness, to provide food for such a world of animals as every where possess the terraqueous globe on the dry land, and in the sea and in the waters, in the torrid and frozen zones as well as the temperate; that the temperate climates, or at least the fertile valleys and rich plentiful regions of the earth should afford subsistence to so many animals, may appear less wonderful perhaps; but that in all other the most likely places for supplies, sufficient food should be afforded to such a prodigious number, and so great variety of beasts, birds, fishes, and insects, is owing to that Being who hath as wisely adapted their bodies to their place and food, as well as carefully provided food for their subsistence there. As the herbaceous eaters are many and devour much, so the dry land surface we find every where almost naturally carpeted over with grass, and other agreeable wholesome plants, propagating themselves in a manner every where. Another wise provision the Creator hath made relating to the food of animals is, that various animals delight in various food, some in grass and herbs, some in grain and seeds, some in flesh, some in insects, some in this, some in that, some more delicate and nice, some voracious and catching at any thing; every variety chusing various food, and perhaps abhorring

horring that which others like, is a great and wise means that every kind hath enough, and oftentimes somewhat to spare. And here we shall find a glorious scene of the Divine Wisdom, Power, Providence, and Care, if we view the various instincts of beasts great and small, of birds, insects, and reptiles, for among every species of them we may find notable acts of sagacity, or instinct, proportional to their occasions for food.

Another excellent contrivance of the Great Creator is, for the preservation of such creatures whose occasions frequently necessitate them to live without or with but little respiration, as fishes, amphibious creatures, many quadrupeds, birds, insects, and other animals who can live some hours, days, yea whole winters with little or no respiration, in a torpitude or sort of sleep, or middle state between life and death: The provision made for these peculiar occasions of life, in the fabrick of the lungs, the heart, and other parts of such creatures, is manifestly the work of Him, who, as St. Paul saith, “giveth to all breath and life, and all things.” How great is the variety of animals! how mighty that Power which preserves the several species from mixing with one another! of these some are covered with hides, some cloathed with hair, others rough with quills and bristles; these have feathers, those scales, some are armed with horns, and others have wings to fly away: Nature has bountifully provided that sort of food
for

for each species which is fittest for it ; moreover she has given them instinct and appetite ; by the first, (as observed before) they are enabled to distinguish things salutary from those that would be noxious to them, and are prompted by the latter to eat their natural food. Thus, wherever we turn our eyes, it evidently appears that all things in this world are admirably directed by a Mind and Providence Divine for the preservation and welfare of the whole. If we look around us, and take an attentive view of the wonders of creation, must not our souls be overcome with astonishment, and we be constrained to cry out “ In wisdom hast thou made them all, the earth is full of thy riches.” God has not only formed the creatures of the earth for our use, but also for our contemplation, that by viewing them, and considering the different qualities which are bestowed on them, we might thereby be led to adore Him whose hand hath done all these things.

The desert waste, the vast forest, the great deep, are filled with innumerable animals, birds, fishes, and reptiles, many of which have never been observed by us. All thy works, O Lord, evince thy wisdom and thy love ; O grant that we may, from every survey of thy creation, improve in wisdom and in piety ; and may neither the occupations of life, nor the blandishments of sense, prevent our enjoying thy presence both in this world and in that which is to come.

The

The advice of the son of Sirach is very just and sublime: " By his word all things consist, we may speak much and yet come short, wherefore in sum he is all, how shall we be able to magnify him? for he is great above all his works, the Lord is terrible, and very great and marvelous in his power. When you glorify the Lord exalt him as much as you can, for even yet will he far exceed; and when you exalt him put forth all your strength and be not weary, for you can never go far enough; who hath seen him that he might tell us, and who can magnify him as he is? There are yet hid greater things than these, for we have seen but a few of his works."

GARDEN. Next let us take a view of the vegetable kingdom: A Garden, that most delightful part of the creation, as I observed before, was the habitation and employment of our first parents before the flood: The trees of the forest, the plants and flowers of the garden and the field, all which with united voices proclaim the great power and wisdom of their Maker; all of them jointly declare that the works of the Lord are great, sought out of all them that have pleasure therein; that is, truly great, truly worthy the enquiring after them, on account of the delight and pleasure which must attend such a search; and indeed who can take a survey of that wonderful system without admiration, and turning his pious and thankful thoughts to the Great Author and Preserver of it?

Now

Now let us range at large, we cry'd,
 Thro' all the garden's boasted pride:
 Here jess'mines spread their silver flow'r,
 To deck the wall or weave the bow'r;
 The woodbines mix in am'rous play,
 And breathe their fragrant lives away:
 Here rising myrtles form a shade,
 There roses blush and scent the glade;
 The orange, with a vernal face,
 Wears ev'ry rich autumnal grace;
 While the young blossoms here unfold,
 There shines the fruit like pendent gold;
 Citrons their balmy sweets exhale,
 And triumph in the distant gale;
 Now fountains, murm'ring to the song,
 Roll the translucent streams along;
 Thro' all the aromatic groves
 The faithful turtles coo their loves;
 The lark ascending pours his notes,
 And linnets swell their rapt'rous throats.

Who can seriously consider the curious variety
 of trees, plants, seeds, and flowers; how all these,
 almost without number, preserve their regular
 and natural order without the least confusion;
 how the same Kind and Wise Providence, which
 first gave them life and being; still continues to
 preserve them; in how amazing a manner their
 growth and nourishment are conveyed by their
 roots, and that by so many fibres, little ducts
 and channels, that are imperceptible to the eye!
 how the tender sap circulates through the plant
 as the blood does through the human body, as
 may be proved to a demonstration; and when
 it seems for a time to have been lost and dead,
 at the return of the kind and genial heat of the
 sun, gives as it were a new life and kind of re-
 surrection to the trees; And lastly, how the
 leaves

leaves not only give it a beauty and ornament, and preserve the fruit and flowers from injury and hurt, and shelter them from the scorching heat of the sun, but also (as some curious men have observed) by their fibres and veins convey to them the moisture of rains and showers, and thus give a fresh increase and nourishment to the plant: Who can consider these things without being struck with admiration, without being inflamed with a desire of prying and diving farther into those wonders, and taking a share in the pleasures which must attend such a search?

This is what some of the greatest Princes, and the ablest and wisest ministers and statesmen have not thought beneath their attention and care: Cyrus the younger (the hero of Zenophon) who, if he had not been cut off in the flower of his age, might have proved one of the greatest princes in the world, did not disdain to work in his garden himself, and to plant and prune his trees with his own hands, which he mentioned with a kind of pride to the Grecian General, when he shewed him his ground, "This spot, said he, I traced out myself, this parterre I laid out, these trees I myself have set, and those I have pruned and grafted with my own hands." Dioclesian, who, but for one blemish, his severity to the Christians, (which he was put upon by his bigotted and cruel priests) was as great a monarch as ever filled the imperial throne; tired at last with the weight and burden of a crown, and weary with the hurry and
noise

noise of a court, willingly resigned all, and retired to a garden which he had made at Salone, and declared he had at last found that which he so long had sought for in vain, a true relish of life, and all the enjoyments of it; and when his friends, in a time of confusion and exigency of state, would have called him from his agreeable retreat, "If you could see, said he, the fine plants I have set with my own hands at Salone, I am sure you would not wish me so much harm as to drag me from my pleasant solitude, to resume the cares and troubles of a crown." But a wiser and greater than these, even Solomon himself in all his glory, made his gardens and his plants his great delight and pleasure, the study and employment of his life; he did not think it beneath him to descend to the very meanest plant; he makes mention of the Hyssop, that groweth out of the wall; of the Lilly, his own rival in glory; and of the Cedar, as superior in stateliness and grandeur. Many more examples of heroes, statesmen, and ministers of princes might be produced, who have preferred the delights of the garden to all the pomp, glory, and pleasures of a court; and that not when worn out with years, or soured with disappointments, but in the great vigour of their age, and in the full current of their glory: Such was the retreat of the great Lucullus; such the wise retirement of the immortal Scipio; such was the choice of Pliny the younger. Pliny was one of the wisest men of his time, and one of the most able and upright ministers that ever sat at the helm of
any

any state ; who, to unbend his thoughts and recreate his mind, still fled for relief to his garden ; of which he has given so lively and elegant a description in his works, as is enough to make one in love with such a delicious place, and such a pleasant rural life. The great Sir William Temple, the most learned, best bred, and finest gentleman of his time, after such a hurry of business as he had undergone ; so many intricate affairs, embassies, and negotiations he had managed with honour and success, retired in the evening of his life to his country seat ; applied himself to gardening, and grew so passionately in love with it, that, in his last will, he gave orders that his heart should be buried in the midst of his garden. Lipsius, one of the wisest and most learned men of his time, was so very fond of his garden and flowers, that he declared, in a letter to his friend, that the fine Tulip roots he had received from him, gave him more pleasure and delight, than if he had sent him so many lumps of silver or gold.

Ye groves and flow'ry vales, in you we find
 The first unblemish'd joys for man design'd,
 Your charming scenes th' attentive mind supply
 With pleasure, in its nice variety ;
 Nature does here her virgin smiles afford,
 And shews us Paradise again restor'd ;
 Our souls their former harmony acquire,
 And vexing care and conscious guilt retire.
 Propitious solitude, thou kind retreat,
 From all the vain amusements of the great,
 In thee alone, without disgust we prove
 The endless sweets of innocence and love.

Flourish,

Flourish, ye gentle shades and rural seats,
 Let endless verdure deck your soft retreats;
 What pow'r, enchanting solitude, is thine,
 That men for thee the dearest ties resign,
 For thee the monarch lays his crown aside.

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But what still displays the greatness of the works of the Lord is, that they are intended and directed by him for the benefit and happiness of mankind: Turn your eyes where you will, these benefits and advantages cannot but strike your thoughts with amazement, and your hearts with gratitude and love; every morsel we take in, every draught we drink, are owing in some measure to these kind and bountiful gifts of God; the bread that strengthens, the wine that makes glad the heart of man, flow from the same stream of Divine Goodness; the cloaths and raiment we put on, whether either for ornament, or for shelter from the injuries of the air, are furnished us by those animals, those sheep that feed upon a thousand hills, that live upon the fruits of the earth, and the herbage of the field. A little worm (as before mentioned) supplies us with all the elegance of silk; and to vegetables we owe the pleasing, cool, and healthful habits of cotton and linen, the former being an exotic: Flax and Hemp are natives of our own climate; the seeds are an excellent nourishment to several sorts of birds; linseed affords a sort of cakes, good to fatten large cattle, and produces an oil that illuminates innumerable families in the night: The hemp is worked up into those spreading sails, by the aid of which

which our ships transport their merchandize to the remotest part of the world, and convey to us the produce of foreign countries; that the same hemp is worked up into cables, strong enough to bear the weight and force of anchors; that ropes, girths, &c. are likewise made of its materials; all these are of constant and universal use in navigation, commerce, husbandry, and domestic affairs. The stately Trees of the forest not only furnish us with materials and timber for our houses, but also, by producing materials for our ships, contribute to the safety of our people, advance the riches and honour of our nation, and convey the wealth and treasures of foreign countries to our happy shores, the rich spices and aromatic drugs, the delightful produce of those distant countries. The truth is, Planting is what we owe to our country, ourselves, and posterity; it was a noble and generous answer, which a person advanced in years made to some, who asked him, why he spent so much time in those plantations, which he could never expect to see grow up to perfection? "I plant, said he, to the immortal Gods, who, as they have made me inherit the things I now enjoy, expect I should leave them in the same flourishing condition to my successors."

There is another great advantage that accrues to mankind from vegetables, an advantage without which life itself would indeed be but a burden, and all the wealth of the world could never be truly desirable, that is Health.

Their

There is hardly a tree or shrub in the wood, or a flower in the garden or the fields but what affords something medicinal, something designed by God, (as David saith) for the use and service of man; the leaves, root, sap, and the bark itself, all tend, in some measure, to the same Gracious end of a Kind Providence; nay even the most obvious and common flowers, such as seem only to have been designed to delight the smell and please the eye, are not without their useful helps and remedies to mankind. Gardening and agriculture have some peculiar pleasures of their own, pleasures that are not like so many others, soured with sorrows, followed by repentance, and destructive to the health; so far from that, in their very nature they tend to the preservation of it, by the wholesome exercise which is inseparable from agriculture and a rural life, and the kind effluvia of a new broken up soil, which experience has shewn to be greatly salutiferous to weak and decayed constitutions. What pleasure must the gardener and planter enjoy, when they see the happy fruits of their labour? when they behold a fruitful spot laid out by their own art and care, and view those hopeful and thriving plants which they themselves have set? what a delight is it for them to gather those fruits which they have grafted with their own hands, which highly enhances the value of them, and affords a double delight and pleasure? for the fruits which naturally grow upon the earth are esteemed only as the produce of nature; but those that have been grafted, or inoculated, by
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ourselves,

ourselves, are looked upon with a sort of fatherly tenderness as our vegetable children, and the pleasing offspring of our industry and care. Some say these are only pleasures of the imagination: It is granted; but are not some imaginary pleasures as delightful as sensual ones? But even these are not wanting among the vegetables, and are as true and real as the senses we enjoy. Who can deny this, when he tastes those delicious fruits which the garden affords, the Nectarine, the Peach, the Grape, Pomegranate, and the Anana, which last, for taste and flavour, doth exceed them all. Then as to the smell, let him but take a walk into the field after a warm spring shower, when God has sent a gracious rain upon his inheritance to refresh it when it was dry; this was the image which the good patriarch Isaac chose to express the most grateful odour he ever smelt in his life, "As the smell of a field, which the Lord hath blessed:" And how chearing and reviving to the eye is such a field, so richly enamelled with a profuse variety of flowers to rival the beauties of the finest sky? But these delights appear in a more exquisite manner in the flowers of the garden, which seem to outvie each other which shall best regale the smell, or please and entertain the sight: The beauty of the painting, and the agreeable variety of the colours, which far excel the finest and richest artificial dyes, as in the gay but too short-lived Tulip, the richly gilt and embroidered Auricula, and the amazing variety of the Carnation; beauties which the pencil and the pen will always

ways endeavour, but in vain, to express. So great and infinite are the beauties displayed by the Almighty in the vegetable creation, that one can hardly imagine any man so void of thought as not sometimes to meditate upon them: They afford a divine lesson for every station in life: Well then might the Royal Psalmist say, "The works of the Lord are great, sought out of all them that have pleasure therein;" great in their nature and wonderful contrivance; great in the pleasure that attends them, and which most expressly shows them to be the works of a Divine Hand; great in the usefulness which they bring to mankind. How various are the productions of the vegetable world! how infinite must be the Wisdom which originally designed, and thus uniformly produces, all these excellencies! and how great the Goodness which thus amply provides for the necessities of his creatures, and affords them so much use, with so much beauty?

Ye woods and wilds receive me to your shade,
 These still retreats my contemplation aid;
 From mortals flying to your chaste abode,
 Let me attend th' instructive voice of God;
 He speaks in all, and is in all things found;
 I hear him, I perceive him all around:
 In nature's lovely and unblemish'd face,
 With joy his sacred lineaments I trace:
 Reviving sweets the op'ning flow'rs disclose,
 Fragrant the violet and the budding rose:
 But all their balmy sweets from thee they steal,
 And something of thee to my sense reveal.
 Ador'd Artificer! what skill divine!
 What wonders in the wide creation shine!
 Order and majesty adorn the whole,
 Beauty and life, and thou th' inspiring soul:

Whatever grace or harmony's express'd
 On all thy works, the God is there confess'd.
 But, oh! from all thy works, how small a part
 To human minds is known of what thou art!
 Fancy gives o'er its flight, in search of thee,
 Our thoughts are lost in thy immensity.

It was the observation of a wise and pious man, That he could draw as useful and improving instructions from flowers and plants as from any other subject whatsoever; and indeed the works of nature, taken in a proper view, appear like so many sermons, and carry along with them a moving tho' silent eloquence, and which cannot but fill our minds with admiration of the Almighty Creator. And, first, the sight of plants and flowers may afford us useful lectures of sobriety and temperance, and prove a proper check upon the excessive drinker, if he doth but observe that as gentle showers have so kind an effect upon them as to promote their growth, and give them a fresh beauty and life, so violent rain and excessive drenches of water make them droop and hang down their heads, tear them to pieces, and rot and destroy them at the root; and if, carrying his reflections farther, he will consider that this is the case with relation to man, that as a moderate use of wine and other liquors (which Providence, for his comfort, has bestowed upon him) gives him fresh life and vigour, revives his spirits, and enlivens all the faculties of his body and mind; so an excessive use of these produces the contrary effects, defeats the design of God's Providence in giving him his blessings, sinks his spirits, weakens his nerves, destroys

destroys his stomach, and impairs all the faculties of his body and mind, entails a crowd of diseases upon him, and brings the unhappy man with sorrow, though seldom, very seldom, alas! with grey hairs to the grave: Such thoughts as these, if this sad way of life will give him time and leave to think, must have a good effect upon him; wean him by degrees from such a vile and scandalous practice; make him ashamed of so mean a vice, so destructive both to soul and body. A serious view of the several parts of the vegetable system may have another good effect upon the minds of men, and raise in them devout and pious thoughts of their mortality, and the frailty and uncertainty of their lives, if they will but observe, that as these plants and flowers are every day exposed to abundance of accidents, liable to be blown down, and torn in pieces by winds and storms; to be withered and scorched by the excess of heat, or nipt and cut off by the violence of the frosts; and though they may have the good luck to escape these, yet their time, alas! is but very short, only for a few weeks or months, or at the farthest the extent of a summer season, after which they must yield to fate, and return to their mother earth again: This thought, by an easy transition, may lead them to remember that this is the very case of their mortal bodies, that, like these, they are every day exposed to many misfortunes, which may cut them off in their prime of life, and in the flower of their age.

These emblems of flowers and plants are what antient writers have often made use of to recommend those great and weighty truths : Homer long since has compared the lives and generations of men to the leaves of trees, which, when they have flourished for a time, and made a goodly show, wither, fall, and return to their mother earth again.

The sacred writers have not disdained to employ these images, to describe the frailty and uncertainty of human life. The noble prophet Isaiah, with his usual elegancy, declares, " That flesh is grass, and all the goodness thereof is as the flower of the field ; the grass withereth, the flower fadeth, but the word of the Lord shall stand for ever." David to the same purpose in that morning psalm, " Men are like grass which groweth up in the morning and flourisheth, and in the evening is cut down and withereth." The apostle Saint Peter hath also made use of this very image, to put us in mind of the shortness and frailty of our lives, " For all flesh, (saith he) is as the grass, and all the glory of man is as the flower of grass ; the grass withereth, and the flower thereof fadeth away."

But if these reflections seem to cast a damp upon our joys, to overcast the serenity and destroy the comfort of our lives, these very plants and flowers carry their ready help and remedy along with them, by setting before us this cheering and reviving image of a blessed resurrection,
that

that as these, when in all appearance they have seemed to be dead and buried in the earth, upon the kind return of the spring, and the genial warmth of the revolving sun, rise as it were out of their graves, appear with the same beauty, arrayed with the same glory which they enjoyed before : So these mortal bodies, when they have long lain mouldering and rotting in their graves, at the sound of the trumpet, at the word of command from heaven, shall arise to fulness of joy and to excess of glory ; with this difference, that these plants, after they return to life, are liable to the same accidents, subject to the same decay and mortality as before ; but these pious and righteous souls, who, by a godly and religious life, by their extensive charity and universal benevolence to mankind, and their temperate and sober use of God's creatures, have qualified themselves for God's favour and a blessed resurrection, can die no more ; death can have no more dominion over them, no more then will they be exposed to the calamities and accidents of life ; but be translated to a happy place where will be no grief nor sorrow, and where tears will ever be wiped from their eyes ; there will they meet with a happiness great as their wishes, and lasting and immortal as their souls, and richly then enjoy all that their hearts can wish, all they could think of, heaven, amazing brightness, purity and truth, eternal joys and everlasting love.

Let others waste in indolence the day,
Or active in the path of folly stray,

To

To vice their little span let others give
 Themselves ignobly practis'd to deceive :
 Pursuits far diff'rent shall thy hours employ,
 Pursuits that oft repeated never cloy,
 From which reflection reaps a double joy.
 Much the Divine Creator has display'd,
 His wisdom in the works that he has made ;
 Nor less than in the rest shines forth his pow'r,
 Exerted in the vegetable lore :
 Nor in the skies alone his pow'r is seen,
 We view it in the grove and flow'ry green ;
 To imitate whose charms all art is faint,
 The rose's glowing blush, what hand can paint ?
 Or equal the pale lilly's snowy hue,
 Or emulate the corn-flow'r's glossy blue ?

COCOA Next let us take a view of the most curious
TREE. and useful tree in the world, the Cocoa, from
 the nuts of which chocolate is made. It is not
 in men alone that the difference of talents and
 dispositions is remarkable, all nature is full of
 similar examples, every climate is not proper
 for every fruit ; happy is that which produces
 the best.

It is true that the country of the Indies is de-
 ficient in some of the necessaries of life ; but this
 loss is amply made up by the great abundance of
 all that is necessary, and of several things that
 are peculiar to it, which draw thither all the
 other nations of the world, either to admire its
 curiosities, or to make a profit of its riches and
 fertility. The Indians can boast, with justice,
 that they have more rarities than all the other
 nations together : Of this every one will be con-
 vinced, when he is acquainted with the nature of
 some

some animals which are familiar to them, and of the fruits which they gather in their fields.

The Cocoa, by some called the Indian Palm, is a large tree of one single trunk, which is never more than a foot in diameter, but rises to the height of fifty feet; from its top spring some slender branches, with leaves sometimes ten or more feet in length, whose weight makes them hang down, though they are very thin, and form an agreeable shade. While the trunk is green it contains a white pith like curdled milk, extremely tender and delicious, which one need not be afraid to eat to excess. The wood is then spongy and cuts very easily, but some time after it is felled it grows very hard, and is made into masts, planks, poles, swords, and arrows. It has three sorts of bark; the first and second are used to pack up merchants goods; the third is so fine that paper is made of it, and it serves for many uses beside. At the top, and immediately under the place where the branches spring out, shoot out a number of husks, a little flatted, of the bigness and length of a man's arm, they consist of two or three coats, which break as the fruit they contain pushes out, and enlarges; then a cluster appears, to which are fixed eighty or one hundred small cocoa nuts, whereof only thirteen or fourteen come to perfect maturity. Clusters of different ages are to be seen upon the same tree, some are in blossom, while others have their fruit already formed, or are ready to be gathered. The Indians do
not

not always delay cutting the nuts till they are come to full ripeness. When the nut is yet green, although of the bigness of two fists, almost a pint of liquor is drawn from it, clear and fresh as the purest spring water; besides, being the most agreeable liquor that can be drunk, it perfectly quenches thirst, refreshes the blood, and cures ardent fevers; when taken hot it stops the flux of blood: When a little farther advanced, that within thickens and cuts with a spoon like cream; it hardens insensibly; first it takes its consistence, colour, and nearly the taste of our nuts; then it becomes like the filbert or almond, but of a much more delicate flavour. The Indians rasp it to mix with their rice, and when they add sugar and cinnamon it becomes a most delicate dish. The oil that is drawn from it is extremely soft, plentiful, and cheap, and is applied to the most common uses. The nut is commonly of the figure and bigness of an oval melon, tho' sometimes longer; it has a triple bark, the outermost is very brown and close; the second, when dry, forms a sort of flax; the third is a very thin skin which runs perfectly white, and every body, even the principal persons in the country, wear caps made of it; but before that second bark becomes dry through ripeness, they season it like Spanish cardoons; and the inside of the nut is used for bread. There is nothing fitter to be spun, or is of greater use, than this sort of flax; after being carded, they make a sort of stuff of it called Ecorcee, and of what remains, tow, ropes, and cables are made

fit

fit for ships; for the bark, agreeing with salt water, grows green again in the sea, and keeps ships at anchor in all safety. Lastly, of the shell immediately closing the fruit, cups, drinking vessels, and other ornaments are made, which become very valuable on account of the figures designed on them by the Indians, with admirable art and rich furniture. Art and experience have taught the natives of this country the manner of drawing wine from this tree, to which Providence seems to have given the virtues of all other plants; for this purpose they cut off a flower or an entire husk, and at that place fix a pitcher hermetically sealed to the tree, that the air may not touch the liquor, which distils continually; when the vessel is full, they boil it, and the fire gives it the taste and quality of wine, although before it was like milk. When the Indians want good vinegar they expose that liquor to the sun, and in order to make strong spirits, distil it by the alembic: They likewise make sugar of it; but, as it is brown, they do not esteem it, having plenty of the white sort. The pith which runs thro' the trunk comes out at the superior extremity, sometimes in a point, sometimes in a round ball inclosed in a husk: This is called Palmite; within is a whiter substance divided by leaves, which shut very close upon one another: They serve for several uses; when eat raw they have an excellent taste; they are put in soup like cabbage, and sometimes used in sallad like lettuce; lastly, when left to dry, they become the finest paper in
the

the Indies ; but by taking away the Palmite the loss of the tree is endangered.

As to the leaves of the Cocoa, which are no less curious and useful than the other parts of the tree, the Indians have a way of preparing and rendering them pliable as cotton ; some make cloaths of them, others cover their houses with them, the merchants use them in package, and seamen make sails of them. This tree is very common in many countries of the Indies. Of all the trees that grow upon the face of the earth, we may venture to say none is more serviceable than the Cocoa ; it alone can supply the necessities of mankind ; its pith, liquor, and fruit are sufficient to support the Indians, who are naturally sober ; and the wood is used in building ships, houses, and making arms ; its leaves supply the place of slates, tiles, and sails for ships ; in short, its different barks are the materials of the different cloathing of the country. Certainly no one, when he contemplates a tree like this, whereon so many different qualities are bestowed by the hand of Providence, adapted to so many uses, but must be naturally led to adore Him whose hand hath made it.

No study can be more pleasing to the imagination than that of natural history ; the beasts that walk the earth, the birds that warble on the branches, the inhabitants of the great ocean, the minute insects, the trees, the fruits, the flowers, every thing that has breath, the regular

lar successions of times and seasons, afford delight, wonder, and instruction to the naturalist; God, even in realms of night and climes of barbarism, never leaves himself without a witness; the visible creation discovers, in a most eminent manner, his Being and Perfections.

The mind cannot fail to be warmed with becoming devotion when it remarks the various, the infinite instances of his goodness to his creatures manifested throughout creation. No man endued with the least spark of reason, who considers the scene before him, can doubt of the existence of a God; and indeed atheism is exploded so perfectly under this view, that the man who professes it would be contemned no less for want of understanding than for want of religion. The most cursory and general observation demonstrates a Deity; but when we come to survey matters more minutely, and to examine the nice coherences of things; when we trace the manifold marks of design and of exuberant goodness; when we behold the stupendous provision of Providence for human wants, as well as for the wants of the inferior creation; in short, when with a philosophic attention we read the great volume of nature, we must derive from every page of the sacred code arguments of faith and dependence, of gratitude and love.

A partial consideration of the universe is ever apt to dishonour its Great Author, and man, weak short-sighted man, is always more ready to distrust

distrust any thing than his own fallible judgment: It is owing to this that the order and harmony in the works of nature, because concealed from narrow-minded views, have so often been miscalled confusion and irregularity. What in the scale of being can we pretend to call superfluous? How can we presume to arraign infinite Wisdom? or with what face dare we set bounds to infinite Power, and mark out the limits of Omnipotence? The savage beast we dread, the domestic animals that obey our call, and the lamb we feed upon, jointly and equally promote the same great end: The same skill was requisite in the formation of the insect, whose minuteness escapes our notice, as is displayed in the huge structure of the elephant; and the smallest reptile we tread upon answers the purpose for which its existence was designed, as well as the enormous bulk of the whale, which requires a sea to sport in, and yields us rivers of oil: Every part of the inanimate, as well as the animal system, exactly tallies with some other, and nothing is without its counterpart in nature, and every part of the creation joins in a beautiful harmony to form that friendly union which supports the whole.

The mountains which (as observed before) have, by some over nice theorists, been censured as shapeless protuberances, open a much more agreeable variety of prospect than the boundless extent of a flat insipid level, which would rather fatigue than please the eye; but if we consider

sider them as yielding the best support, and most commodious habitations to a great number of animals; affording the richest store-house and repository for the fossil kingdom; giving rise to fountains; stopping and condensing vapours, with many other admirable uses, we shall be so far from wishing our globe destitute of these advantageous and majestic elevations, that we must own their beauty alone would well compensate for their want of use, and the benefits we receive from them make us amends for their seeming deformity.

The winds, at which some of a too delicate frame are apt to shudder, and which blow in such a variety of directions, and with such different degrees of force, from the gentle breeze that fans the grove, to the destructive hurricane that overturns it, that they seem only fortuitous instruments of mischief, yet are produced by regular causes for the most beneficial purposes: In their ordinary course they sweep away the stagnant vapours that are grown unfit for the service of the globe, and bring on a fresh succession of purer air; they transport our ships to the remotest regions, and make us partakers of the blessings which are scattered with such wide profusion over the whole earth. The blemishes which minute philosophers are so ready to spy out in the works of nature, are only owing to defects in their own understandings, just as the films and motes which seem to float in the air before a weak eye, are only the effect of a disorder

order in the organ of vision, without any defect in the object which is so unjustly censured; nay clouds and fogs, which some peevish mortals look upon as blots on the fair face of day, screen us from excessive heat, and it is from these we owe the dews that cheer the drooping plant, and those refreshing rains that fertilize the soil. The mountains and winds, which have been already touched upon, greatly contribute to this good purpose. But hence likewise the vollied thunder strikes the ear with terror, while a great quantity of imprisoned vapour bursts out from its confinement, and thick flashes of lightning spread horror and consternation all around; these, tho' it must be owned are sometimes the heralds of divine wrath to alarm and admonish mankind, and at others the ministers of vengeance to point the flash and wing the bolt with ruin, yet they can no more be reasonably objected to; nor wisely left out of the creation on this account, than we can subsist without the beating of the heart, or the circulation of the blood. These horrid struggles of pent up elements, which rend the labouring earth rather than not be produced into use, and bear the part assigned them in promoting the general good, resemble those medicines which are severe in their operation upon the human frame, and occasion great commotions in the animal œconomy; yet while they threaten us with ruin, their shocks are productive of welfare, and instrumental in the hand of Providence to health. When we look back upon these phenomena, we have no doubt of the benevolence

benevolence as well as the Power and Wisdom of their Author: The snow yields a kindly warmth, and gradual moisture to the ground like wool; and the frost, which is scattered upon it, manures it like ashes. Nothing in the whole chain of being is without its use, because nothing could be created without the concurrence of such Infinite Power and Wisdom as it is absurd to imagine should be employed about any thing not productive of some singular good: The same admirable design and contrivance, the same order and harmony are displayed in the brightest characters over every part of the creation, from the fine texture of the mite, to the stupendous fabrick of the solar system. The least motion in any part of the universe must obey the invariable laws appointed it, or it would draw on a train of ill consequences, which would shock the whole system far beyond the most complicated horrors that could possibly be produced by the agency of natural causes, and which nothing but the interposition of the Deity could prevent. Praise, wonder, and gratitude are our province; censure and correction of the operations of nature will never become us, till a finite creature can comprehend Infinity, and one hid in this vale of darkness shall be able to spy out every secret spring that actuates the boundless whole; till he can extend his view, and take in all that immense ocean of Being, of which he himself makes so inconsiderable a part, as would be overlooked by any thing less than that Omnipotence and unbounded Goodness, which he so

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insolently

insolently arraigns, and so impotently endeavours to scan.

Say, for thou canst, (who e'er the birth of time,
Or fair creation, with the Godhead dwelt)
O say, what cause yet unexplor'd impell'd
The Great Mover o'er the lifeless dust,
To breathe his Spirit on the plastic mass?
The image of his own bright form t' impress,
And bid him rise man, of the creatures lord.
'Twas Goodness Infinite that form'd the thought;
'Twas Wisdom Infinite design'd the plan,
While high Omnipotence the glorious work
Began, atchiev'd, survey'd, "and saw 'twas good."
Shall man alone, to whom thou stand'st reveal'd,
In all this blaze of beauty vainly gaze
An unconcern'd spectator? latest work!
Period! and noblest of creation's acts!
Shall he insensible not see thy pow'r,
Or proudly disallow it? shall he dare,
With impious sophistry, ascribe to chance
And systematic atoms, works that speak
One all-conducting universal cause!
Parent and Lord of him, of them, and all!

It has been said, and said with truth, that the proper study of mankind is man; and indeed we know not to what good end any study or science can conduce, which leads us not to a better knowledge or improvement of our present state, and a juster sense of our high obligations to the Great Being, who has appointed to us our several ranks below, full of subtlety, and fond of nice distinctions: Some men, assuming the name of philosophers, pretend to delineate the nature, and draw the true picture of man; but, deluded by the glare of their own false wisdom, and forsaking the only true and living light,

light, they have at once perplexed the subject, bewildered themselves, and seduced many to tread with them the inextricable mazes of scepticism and error.

Can we be insensible to the goodness of such GRATI-
a Benefactor, that gracious Father of mercies? TUDE.
To acknowledge his benefits is the greatest benefit of all to ourselves; to be sensible of his paternal love, to meditate on his goodness, to admire his excellence, to celebrate his praise, is heaven itself, is paradise, is the life of angels, and the supreme state of blessedness: In a word, a Benefactor, whose favours are immensely great, innumerable, many, inexpressibly good, and precious; "For who can express the mighty acts of the Lord? who can shew forth all his praise?" said one who had often employed on that praise his most active thoughts and best endeavours, and than whom no one was better able to declare the everlasting mercy and boundless love of the Lord God Almighty.

Can we fail to be grateful, when each of us, in solemn reflection, applies to himself the apostle's striking and humbling question, "What hast thou which thou didst not receive?" If, oh man! thou canst boast of nothing which is thine own, if all thou art, if all thou hast, nay, if all thou hopest, both in time and eternity, are the free and unmerited gift of an Almighty Father, if all flows from the unexhausted treasures of his liberality, boast not thyself, but humble in soul

lift up thy adoring heart to him, bless him with the most rapturous and sincere gratitude, and let it be the zealous, the uniform study of thy life, to express thy generous and thy delightful acknowledgment of all his mighty and innumerable benefits.

It would almost be an insult upon the common sense of mankind, to attempt to prove that such gratitude to God is right, just, and reasonable: The man who thinks at all must feel that it is so; nothing but a moment's serious reflection is necessary to make every poor dependent mortal full of gratitude to God; nay, indeed, all pretences to religion without it are vain; Gratitude is religion, the noblest part of religion, that which will endure even beyond the limits of time, a religion which will remain even through all eternity; grateful praise, adoring, and thanksgiving, will be the employment of the blest, through endless ages, in the kingdom of glory: They who will not give a serious thought to matters of so high concern, matters which properly alone concern them, for all beside, if these be neglected, is but specious trifling and impertinent folly; they who will not give a moment's serious thought to the eternal concerns of their immortal souls, as they scarcely claim the rank of animals, so are they beneath all hope of improvement.

In short, Gratitude is the great spring which sets all the wheels of nature a-going, and the whole

whole universe is supported by giving and returning, by commerce and commutation; so that the ungrateful man, that blemish to his nature and reproach to his creation, is an exception from all the visible world; neither the heavens above, nor the earth beneath, afford any thing like him; and therefore, if you would find his parallel, you must refer to that place which is both the repository and the emblem of ingratitude; cultivate then the divine virtue, opposite to this most hateful vice; cultivate this most excellent virtue of Gratitude, upon which are founded the greatest and most sacred duties whereof man is capable, and into which indeed almost all duties both to God and man may be resolved.

Be it our care, therefore, to make the experiment to which every object and every circumstance of life invites, nor thinking it sufficient to have read an exhortation to this self-rewarding duty, but dedicating a little time to private recollection, and meditating not only on the general mercies which we share in common with our fellow creatures and fellow Christians, but also on the mercies peculiar to ourselves, where-with God, in the exuberance of his goodness, hath blessed us: Thus shall we find an ingenuous rapture fill the heart, together with an holy shame and indignation that we should ever offend so good and kind a Father who hath given them; and after that gift what could he withhold? hath given them his only-begotten Son,

to live, to die, to rise again for them, and who, oh boundless source of everlasting good! how shall we find thoughts to conceive, or words to express thy love! who, if we are found sensible of his love, and grateful for it, will give us a kingdom of bliss consummate, which shall never know diminution or decay, and when we shall find this mortal structure sinking into the dust, we shall find the nobler powers of our souls kindling into life and immortality: With what pleasure shall departed happy souls survey the most distant regions of the universe, and view all the glorious globes thereof, and their noble appendages, with a nearer view? Supereminently virtuous characters will be made ambassadors of peace to new-created beings; ministring spirits, to execute the commands, and bear the orders of the Almighty Potentate to the remotest worlds, kings of globes, proportionate in magnitude, splendour, and felicity to their merits, or ministers of the imperial Court of Heaven; under the impression of which, well may we join the enraptured David, and say, " Praise the Lord, O my soul, and all that is within me praise his holy name; praise the Lord, O my soul, and forget not all his benefits; for his mercy is great above the heavens, and his truth reacheth unto the clouds."

But man, whom thy peculiar grace design'd,
 The image of thy own eternal mind:
 Man, thy chief favourite, thou didst inspire
 With a bright spark of thy celestial fire:
 Rich with a thinking soul, with piercing eye,
 He views the spacious earth and distant sky,
 And sees the various marks of skill divine,
 That in each part of nature's system shine:

Him

Him therefore it becomes, in grateful lays,
To sing his bounteous Maker's solemn praise.

That the Christian religion, which draws its origin from the purest streams, which is founded on the best authority, and which has such noble and desirable tendency, which is calculated to serve the interest of nations, communities, families, and individuals, that such a religion should have men of sense and reason for its enemies, is very strange and surprising: It would be almost incredible, if sad experience did not render it too obvious to be contradicted, to see men, in a land of gospel light, persuading themselves and others to embrace and continue in darkness, cannot but suggest some melancholy considerations to the pious mind. The reason that our blessed Lord assigns for persons preferring darkness to light, is the most obvious that could be offered; it is because, says he, "their deeds are evil;" and he adds immediately after, "for every one who doth evil hateth the light, neither cometh he to the light, lest his deeds should be reprov'd." It is very astonishing that Christianity should be the object of our modern freethinkers abhorrence, since its doctrines are holy, just, and good, pure and unspotted in its morals, affording not the least sanction for sin, absolutely incapable of being made subservient to the cause of impiety. The laws of nature these deluded men profess to follow, but from what principles and for what ends? Do they not make it bend to their own inclinations, and plead for its supporting their vicious practices? Pride and
libertinism,

libertinism, (to which we may justly add ignorance of its evidences) have been justly esteemed the foundation; "but we have not so learned Christ;" his law is indeed a law of liberty; the observance of it introduces a man unto the most noble and desirable freedom, corresponding with the primitive and natural tendency of the soul: There is no religion that has such an influence on the laws of mankind executive, or that is so subservient to their happiness as the Christian; its doctrines reasonable, its precepts holy, its commands equitable, its contents perspicuous, its every part worthy of God; inattention to it is the grand spring of infidelity amongst its opposers. There is nothing that recommends Christianity more than the virtuous qualities and pious behaviour of its adherents; nothing sinks the credit of it amongst those who will not give themselves the trouble to inspect its contents, and examine its evidences, more than the careless manners and lukewarm zeal of some of those who are set for its defence. It is too obvious to be contradicted, and withal a circumstance too melancholy not to be lamented, that we have thousands in this land of gospel light, whose lives make atheists, and whose doctrine slaves the exemplary carriage of Christians, not only recommend their religion to others, but also will prove the happy means of endearing it to themselves.

O may my soul, freed from its native rust,
 With joyful ardour to thy precepts fly,
 There, (still a youth) record I am but dust,
 And with thee ponder what it is to die.

Strange

Strange that mankind, by fatal error born,
 Can so abruptly shut their eyes to truth,
 So far forget themselves, to scorn
 Those sacred treasures which the soul adorn,
 Those treasures wisdom gives to thoughtful youth,
 Deluded wretch! pursue thy senseless scheme,
 By ev'ry curst art thy end obtain,
 Then learn too late that this thy golden dream,
 For short-liv'd pleasure brings thee lasting pain.
 But timely wise, my soul, do thou retire
 Within thy chamber, commune and be still,
 Repress the fallies of impure desires,
 And learn obedience to th' Almighty's will,
 Let vice be e'er so lovely in her mien,
 However drest to trap unwary youth,
 Shun her enticements, be not with her seen,
 But choose the paths of innocence and truth.

For a Conclusion of this work, the last thing I shall infer from the foregoing treatise shall be, That we ought to pay God all that adoration and worship which his right of creation and our continual preservation entitle him to, and his great mercies call for from us: O! may we never forget our Creator's appointment from the very creation of one day in seven to his service. It must be confessed, that too great inadvertency about, and neglect of this antient, universal, and most reasonable and necessary duty, have of late years too much prevailed.

One day in seven is one of the most antient appointments which the Almighty gave to the world. It is said, Gen. ii. ver. 3. "He rested on the seventh day from all his work which he had made. And God blessed the seventh day, and sanctified it, because that in it he

he had rested from all his work." This Sabbath was probably in some measure forgotten in the following wicked ages, which God complains of Gen. vi. 5. and so after the flood likewise. But after the return out of Egypt God was pleased to renew this day, and to establish it for a perpetual standing law, and accordingly it was observed down to our blessed Saviour's time, countenanced and strictly observed by our Great Lord and Master himself, and his apostles and disciples in and after his time, and hath been constantly observed, in all ages of Christianity, down to our present time. Thus we have a day appointed by God himself, which hath been observed by all ages, except some few which deserve not to be brought into example. And a wise designation of time this is, well becoming the Divine Care and Precaution, serving for the recruiting our bodies and dispatching our affairs, and at the same time to keep up a spiritual temper of mind; for by allowing six days in seven the poor have time to earn their bread, and men of business time to dispatch their affairs: But had there been more, or all our time allotted to labour and business, our bodies and spirits would have been too much fatigued and wasted, and we should soon have forgotten divine things; but the appointment of one day in seven to the Almighty's service hath prevented these inconveniences, hath given a relaxation to ourselves, and ease and refreshment to our wearied beasts, and to poor fatigued slaves; a longer liberty would too much have robbed the master's

master's time, and bred idleness; so by this wise
 provision of only one day of rest to six of labour,
 that inconvenience was also prevented. Thus
 the Wise Governor of the world hath taken care
 for the dispatch of business, as well as for the
 appointment of the Sabbath; and there are two
 things enjoined in the commandment, a cessa-
 tion from labour and worldly business, and that
 we remember to keep the day holy, which re-
 membrance is another thing also to be taken
 notice of in this commandment more than in any
 of the other commandments, and implies, that
 there is great danger of our forgetting or neglect-
 ing to keep this day holy, and that the keeping
 it holy is a duty of more than ordinary conse-
 quence and necessity. First, To perpetuate the
 remembrance of those grand works of God in
 the creation, commemorated on that day in the
 first ages of the world, in the middle ages, the
 creation and delivery from Egypt, and, under
 Christianity, the creation and redemption by
 Christ, which mercies, without such frequent
 occasions, would be ready to be forgotten or
 disregarded in so long a tract of time as the world
 hath already stood, and may by God's mercy
 still stand. Secondly, To keep up a spiritual
 temper of mind by those frequent weekly exer-
 cises of religion, to procure God's blessing upon
 the labours and business of our six days, which
 we can never expect to be prosperous if we ne-
 glect to keep the Sabbath; for how can we ex-
 pect God's blessing upon a week so ill begun
 with a neglect or abuse of God's first day? Now,
 to

to keep the Sabbath holy is not by bare resting from work, but holy acts are the proper business for a holy day celebrated by rational beings, among all which the grand, principal, and most universally practised, is the public worship of God, the assembling at the public place of his worship, to pay (with our fellow creatures) our thanks and praises to the Infinite Creator and Redeemer of the world. This hath been the practice of all ages, it was as early as Cain and Abel's days, it was practised by religious persons in the following ages till the giving of the law, and at the giving of that God was pleased to order places, and his particular worship as well as the seventh day. The tabernacle and temple were appointed by God's express command; besides which there were synagogues all over the nation, so that in our Saviour's time every town or village had one or more in it, and Jerusalem had above four hundred. The worship of these places our blessed Saviour was a constant and diligent frequenter of: As to the practice of the apostles, and the following ages of Christianity, they did not think it enough to read and pray and praise God at home, but made conscience of appearing in the public assemblies, from which nothing but sickness and absolute necessity did detain them; and if sick, or in prison, or under banishment, nothing troubled them more than that they could not come to church: No trivial pretences, no light excuses were then admitted for any one's absence from the congregation; but, according to the merits of
of

of the cause, severe censures were passed upon them. The public worship of God then is not a matter of indifference, which men have in their own power to do or omit as they please, neither is it enough to read, pray, or praise God at home, (unless some inevitable necessity hindereth) because the appearing in God's house on his day is an act of homage and fealty due to the Creator, a right of Sovereignty we pay him, and the withholding those rights and dues from God is a kind of rejecting God, a disowning his Sovereignty, and a withdrawing our obedience and service; and this was the very reason why the profanation of the Sabbath was punished with death among the Jews, the Sabbath being a sign or badge of the God they owned and worshipped. And altho', under Christianity, the punishment is not made capital, yet have we no less reason for the strict observance of this holy day than the Jews, but rather greater reasons. If by the celebration of the Sabbath the remembrance of their deliverance from the Egyptian bondage was kept up, and God acknowledged to be the effector thereof, we Christians have a greater deliverance from sin and Satan, wrought by a greater Redeemer than Moses, even the blessed Jesus, whose resurrection, and the completion of our redemption thereby, was performed on the Christians' Lord's-day. And now since it appears that the works of the Lord are so great, so wisely contrived, so accurately made, as to deserve to be enquired into, since they are also so manifest demonstrations of the Creator's
Being

Being and Attributes, that all the world is sensible thereof, to the great reproach of atheism, what remaineth but that we fear and obey so great and tremendous a Being; that we be truly thankful for, and magnify and praise his Infinite mercy manifested to us in his works; that we may weekly meet together to commemorate and celebrate the great works of creation, and our redemption by Jesus Christ; that we may pay our acts of devotion, worship, homage, and fealty to our Great Creator and Preserver, to whom be all honour, praise, and thanks, now and evermore. Amen.

PHILANTHROPOS.

Is not, Lorenzo, then impos'd on thee
 This hard alternative, or to renounce
 Thy reason and thy sense, or to believe?
 What then is unbelief? 'tis an exploit,
 A strenuous enterprize: To gain it man
 Must burst thro' ev'ry bar of common sense,
 Of common shame, magnanimously wrong:
 And what rewards the sturdy combatant?
 His prize repentance, infamy his crown.



E R R A T A.

Page 13, lines 21, 22, and 23, that no measure of their bigness can be found out: By this observation, *dele* the colon after the word *out*, and put a *semicolon* after the word *observation*.

Page 19, line 25, *for* moving round the respective suns, *read* moving round *their* respective suns.

Page 43, line 9, *for* inwrap the skin, *read* inwrap the *body*.

Page 79, line 12, *for* we find no less of this capital virtue, *read* we find no *lesson* of this capital virtue.



